

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN**

MARLEEN M. LAPLANT, on her own)	Case No. 2:11-CV-00910
behalf and on behalf of a class similarly)	
situated,)	
Plaintiff,)	
)	
v.)	
)	
THE NORTHWESTERN MUTUAL LIFE)	
INSURANCE COMPANY, a Wisconsin)	
mutual insurance corporation,)	
Defendant.)	
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EXPERT REPORT OF MICHAEL J. MOORE, PH.D.

June 28, 2013

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I. INTRODUCTION

A. Qualifications and Professional Experience

1. My name is Michael J. Moore. I am a Senior Lecturer at Yale University, with appointments in the Jackson Institute for Global Affairs, the School of Management, and the School of Public Health. I currently teach courses in Competitive Strategy, Regulation and Antitrust, and Microeconomics. Most recently, before joining the faculty at Yale in 2012, I was a Professor of Public Policy at the Batten School of Leadership and Public Policy at the University of Virginia, where I taught courses in Econometrics, Statistics, and Cost-Benefit Analysis. I received my Ph.D. in Economics in 1984 from the University of Michigan. My professional career has been devoted to research, teaching, and consulting in applied microeconomics, including the fields of industrial organization, law and economics, risk and insurance, regulatory and antitrust policy, health economics, econometrics, and statistics. I have also served on the faculties of the University of Virginia (Darden, Law School, Economics, and Medical School), Duke University (Fuqua School of Business, Sanford Institute of Public Policy, and the Center for Aging, Duke Medical Center), the University of Chicago (Graduate School of Business), INSEAD, UC-Santa Barbara (Donald Bren School of the Environment), and the University of Georgia (Terry College of Business). In 1998-99, I was the John M. Olin Fellow in Law and Economics at the George Stigler Center at the University of Chicago.
2. I have published approximately 50 articles in scholarly journals, monographs, and proceedings, and have acted as referee for hundreds of articles submitted to the leading scholarly journals in economics. My research has been funded by the National Science Foundation, the National Institutes for Health, and the U.S. Veteran's Administration. My published research consists almost entirely of economic analyses of real world problems. I have won three awards for this research: the Kenneth Arrow Award for Best Paper in Health Economics (1993), the Kulp-Wright Award for Best Book in Risk and Insurance (1992), and the Best Article Award (1988) from the economics journal *Economic Inquiry*.
3. My expertise in this matter lies in my general knowledge of economics, particularly law and economics, competition policy, the economics of risk, uncertainty, insurance, and asset pricing, and of the econometric and statistical methods often used to compute economic

damages. I have acted as an economic expert in a testifying or consulting capacity in a number of cases. I am being compensated for my work at the rate of \$750 per hour. I have directed employees of Analysis Group, Inc., an economics research and consulting firm, to assist me in this assignment. I also receive compensation based on the professional fees of Analysis Group. My curriculum vitae and record of recent testimony are presented in Appendices A and B.

4. I reserve the right to augment or alter any of the opinions expressed herein upon receipt of further evidence or information.

B. Allegations and Assignment

1. Description of putative class

5. Plaintiff's Brief in Support of Motion for an Order Redefining the Class and for Related Relief ("Plaintiff's Brief") was filed on March 4, 2013 on behalf of Marleen M. LaPlant and a putative class of purchasers of Northwestern Mutual annuity products.¹ The putative class is defined in Plaintiff's Brief to be:

All persons who (a) purchased a Northwestern Mutual Life Insurance Company Flexible Premium Annuity or Retirement Annuity (or other deferred, fixed annuity) in force and in its deferral period as of March 31, 1985, and (b) did not sign the 1983 Amendment Agreement while residing in a state other than Wisconsin, and their successors in interest. Excluded from the Class are any of Northwestern's officers, trustees and their family members or affiliates.^{2, 3}

¹ Plaintiff's Brief in Support of Motion for an Order Redefining the Class and for Related Relief, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, United States District Court, Eastern District of Wisconsin, Case No. 2:11-CV-00910, March 4, 2013 ("Plaintiff's Brief").

² Plaintiff's Brief, p. 13.

³ As used by Northwestern Mutual, "Flexible Premium Annuity" ("FPA") refers to an annuity for which the annuitant may make a range of different premium payments, "Retirement Annuity" ("RA") refers to an annuity with a fixed premium due at regular time intervals, and "Single Premium Retirement Annuity" ("SPRA") refers to an annuity with a single up-front premium payment. The data I have received to date from Northwestern Mutual include only RAs prior to 1971. The data include new RAs, FPAs and SRAs for 1971. After 1971, all new Northwestern Mutual annuities in the data were either FPAs or SPRAs.

6. Marleen LaPlant entered into an annuity contract with Northwestern Mutual on May 1, 1975. Mrs. LaPlant surrendered her annuity on July 3, 2008 and retired on July 31, 2008.⁴ She was a resident of Wisconsin when she entered into her annuity contract, as well as when she surrendered it.⁵ Plaintiffs seek to add Bruce Williams as an additional representative of the class. Mr. Williams holds two Northwestern Mutual annuities still in the accumulation phase: his Flexible Premium Annuity was purchased on July 27, 1984 and his Single Premium Retirement Annuity was purchased on May 3, 1984.⁶ Mr. Williams was a resident of Wisconsin when he purchased the two annuities and remains so today.⁷
7. Using data provided by Northwestern Mutual as part of this litigation, I estimate that 19,735 policies are potentially at issue in this litigation. These policies were purchased by 18,553 individual annuitants (some annuitants purchased more than one policy). Exhibit 1 describes my determination of the putative class, starting with potential class annuities identified by Northwestern Mutual and accounting for exclusions as identified in the definition of the class in Plaintiff's Brief.⁸ Annuitants who signed Update '83 outside of Wisconsin are not

⁴ Deposition of Marleen LaPlant, September 9, 2009, p. 77:2-6 ("Q ...When did you actually retire? A. July 31st of '08"); Exhibit 1 to deposition of Marleen LaPlant, September 9, 2009, pp. 121-124.

⁵ Complaint and Jury Demand, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, Code: 30701, August 26, 2008 ("Complaint and Jury Demand, *LaPlant v. NM*"), ¶8 ("The plaintiff Marleen M. LaPlant resides at W7868 Riedel Lane, in the City of Fort Atkinson, Jefferson County, Wisconsin 53538. She entered into the annuity contract with Northwestern attached hereto as Exhibit A on May 1, 1975) and ¶13 ("she and all Class members were residents of the State of Wisconsin at the time that they purchased the Annuity contracts."); also see Exhibit 1 to deposition of Marleen LaPlant, September 9, 2009, pp. 121-126.

⁶ Plaintiff's Brief, pp. 16-17 ("In addition, plaintiff seeks to add trial witness Bruce Williams as an additional representative for the expanded Class."); Trial Exhibit 155, NM Policy of Bruce L. Williams, July 27, 1984 and Trial Exhibit 157, NM Policy of Bruce L. Williams, May 3, 1984.

⁷ Deposition of Bruce Williams, May 18, 2010, p. 4:10-15 ("Q. Could you please give your address for the record as well? A. 10230 West Grange Avenue, Hales Corners, Wisconsin, 53130. Q. And how long have you lived at that address? A. Since '85, about 35 years I guess."). Also see Trial Exhibit 155, NM Policy of Bruce L. Williams, July 27, 1984.

⁸ Plaintiff's Brief, p. 13.

included in the class.⁹ Exhibit 2 shows the state of residence of class members with pre-MN annuities in-force as of end-of-year 2012.

8. Using data provided by Northwestern Mutual as part of this litigation, I estimate that of the 18,553 putative class members, 4,860 owned a Northwestern Mutual life insurance policy as of 2012. Of these, 1,374 either terminated or surrendered their annuity policies before the beginning of 1994. I also estimate that 9,931 concurrently owned a Pre-MN annuity and Northwestern Mutual life insurance policy for some time during the class period.¹⁰
9. Using data provided by Northwestern Mutual as part of this litigation, I estimate that of the 18,553 putative class members, 1,665 of them purchased a Current Rate Annuity (“CRA”) from Northwestern Mutual at some point during the class period.¹¹

2. Description of defendant

10. Northwestern Mutual Life Insurance Company (“NM”) was founded in 1857. According to its website, NM is the largest direct provider of individual life insurance in the United States. NM sells its policies through independent contractor agents and has more than 350 offices in the United States.¹²
11. As of 2013, annuities accounted for 9% of NM’s \$202 billion in assets under management. The company currently manages \$18.3 billion in annuity assets, covering 325,500 client

⁹ Plaintiff’s Brief, p. 1 (“After removal, the Seventh Circuit held that annuitants who signed an amendment with a choice of law clause outside of Wisconsin may not have Wisconsin-law claims. Accordingly, we seek in the present motion to certify a class combining all Annuitants who have Wisconsin law claims: those who did *not* sign the amendment and those who amended in Wisconsin.”). Update ’83 was a policy amendment, also referred to as the 1983 Amendment Agreement, offered by Northwestern Mutual in 1983. The purpose of the amendment was to directly link a policy’s annual dividends to the loans taken against that policy.

¹⁰ See Exhibit 3.

¹¹ See Exhibit 4. Northwestern Mutual introduced the Current Rate Annuities or “CRA” policies in 1985 as a replacement for its existing FPA and SPRA products. The CRAs were designed to track “new money” rates by paying an interest rate on deposits that was declared monthly by the company (see Minutes of Insurance Product & Marketing Committee, September 26, 1984, ML2_NM_4832 to ML2_NM_4836, for additional description; also see Planning Committee Minutes, July 19, 1984, ML2_NM_4877 to ML2_NM_4882).

¹² Northwestern Mutual, “Northwestern Mutual Facts for 2013,” May 2013, available at <http://www.northwesternmutual.com/about-northwestern-mutual/our-company/Documents/fact_sheet.pdf>, accessed on June 17, 2013.

contracts.¹³ In addition to annuities, NM provides life, disability, and long-term care insurance policies as well as other investment products and services.¹⁴ In 1985, the company managed a total of \$18 billion in assets (approximately \$39.3 billion in 2013 dollars).^{15, 16}

3. Allegations

12. Plaintiffs allege that NM has violated the terms of at-issue (pre-MN) annuity contracts starting in 1985 by unilaterally changing the basis on which it credits Annuitants' accounts (the "1985 change").¹⁷ Before the change, plaintiffs allege these credits were based on a dividend interest rate derived from NM's divisible surplus.¹⁸ After the change, plaintiffs allege credits were based on the interest earned on a segmented account of short to medium term investments.¹⁹ Plaintiffs further allege that NM did not notify Annuitants of the 1985 change, nor did it seek their approval of such a change.²⁰ Plaintiffs' brief in support of class certification contains a section titled, "*Damages Can be Calculated on a Class-Wide Basis*," in which plaintiffs purport to advance a common, formulaic method to calculate class-wide

¹³ Northwestern Mutual, "Northwestern Mutual Facts for 2013," May 2013, available at <http://www.northwesternmutual.com/about-northwestern-mutual/our-company/Documents/fact_sheet.pdf>, accessed on June 17, 2013.

¹⁴ Northwestern Mutual, "Northwestern Mutual Facts for 2013," May 2013, available at <http://www.northwesternmutual.com/about-northwestern-mutual/our-company/Documents/fact_sheet.pdf>, accessed on June 17, 2013.

¹⁵ Northwestern Mutual Life, Trial Exhibit 285, "1985 Annual Report".

¹⁶ In January 2013, the Consumer Price Index (CPI) was approximately 2.18 times greater than the CPI in January 1985. See U.S. Department of Labor Bureau of Labor Statistics, "Consumer Price Index," last updated June 18, 2013, available at <<ftp://ftp.bls.gov/pub/special.requests/cpi/cpiat.txt>>, accessed on June 24, 2013.

¹⁷ Complaint and Jury Demand, *LaPlant v. NM*, ¶2 ("To initiate this scheme, Northwestern unilaterally and deceptively altered the basis on which it credited the accounts of Annuitants.").

¹⁸ See "Retirement Annuities," ML_NML3_0446.

¹⁹ Complaint and Jury Demand, *LaPlant v. NM*, ¶2 ("Ignoring the Annuity contract's plain requirement to credit the Annuitants' accounts with a genuine share of the Company's divisible surplus as dividends, Northwestern instead has credited Annuitants with what it continues to call 'dividends' but in fact is merely the interest earned on an account limited to some short-term bonds exclusively and secretly chosen by Northwestern.").

²⁰ Complaint and Jury Demand, *LaPlant v. NM*, ¶33 ("Northwestern never solicited or obtained the Annuitants' agreement to this 1985 change, nor did it even disclose the change to them in its Annual Reports to policyholders of otherwise."); Complaint and Jury Demand, *LaPlant v. NM*, ¶35 ("Because Northwestern did not follow its own policy and practice of informing the Annuitants of the change and seeking their written consent to alter the terms of the Annuities, the Annuitants were left unaware and without a reasonable means for learning that Northwestern was no longer crediting genuine dividends to their accounts.").

damages.²¹ Plaintiffs seek to certify a nationwide class of Pre-MN annuity holders, asserting 1) that all such Annuitants suffered a common injury as the result of NM's alleged acts, and 2) that damages can be computed on a common, formulaic basis for the entire class.²²

4. Assignment

13. I have been asked by Counsel for Defendant NM to assess whether the economic facts and evidence support a finding that all putative members of the class suffered "impact" (i.e., whether impact is "common"), whether proof of impact is common, and whether damages can be computed for all putative members of the class using a common methodology. I have further been asked to evaluate whether Mr. Robert Hoyer's Expert Report, submitted on behalf of Plaintiffs on March 4, 2013, offers a method of proof of impact that is common to all class members, whether he proves that impact is common, and whether he provides a viable common, formulaic methodology for computing damages to individual class members.²³

5. Materials relied upon

14. In preparing my report, I was assisted by a staff of economists at Analysis Group, Inc. All opinions are my own, and all decisions concerning analyses to be conducted and included are also my own.
15. I reviewed documents and materials produced by Plaintiffs and Defendants in this matter. See Appendix C for a list of documents reviewed. In some cases where there was a

²¹ Plaintiff's Brief, pp. 25-26 ("Plaintiff is prepared to prove injunctive and damages relief on a class-wide basis...Here the effect of the 1985 Change on policyholders can be calculated mechanically using common evidence, without resort to individualized trials. ...The difference between the 'dividend' rate used pursuant to the 1985 Change and the portfolio-based rate that should have been used can readily be determined from Northwestern's records.").

²² Complaint and Jury Demand, *LaPlant v. NM*, ¶41 ("Northwestern's actions have injured and will continue to injure Annuitants by under-crediting their accounts by millions of dollars per year."); Plaintiff's Brief, p. 2 ("Plaintiff demonstrates in the accompanying expert report of Robert Hoyer (App. 727-52) how damages can be calculated on a formulaic basis for each class member.").

²³ See Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for M. LaPlant v. Northwestern Mutual Life Company, Hoyer Actuarial Litigation, LLC, March 4, 2013 ("Hoyer Report").

voluminous record, I identified areas in which I was interested, and instructed my research team to examine documents for relevant evidence. In all of those cases, I conducted my own independent reviews of the evidence to confirm that my instructions had been carried out effectively. My inquiry into this matter is ongoing, and I reserve the right to consider any new evidence of which I might become aware and, if necessary based on this new evidence, to alter my opinions.

C. Analytical Approach

16. I understand as an economist that there are three thresholds under consideration in my assignment - whether impact is common, whether determination of impact is amenable to common proof, and whether there is available a viable common damages methodology. In particular, is the injury resulting from the alleged harm provable using evidence common to the class, and is there a methodology that allows the measurement of damages on a class-wide basis using a common method or formula?²⁴
17. The foundation of my analysis is the determination of impact and the measurement of damages at the individual level. If it can be shown that all, or almost all, individuals have suffered injury using “common” evidence, then impact is “common,” and the evidence used constitutes “common proof.” If all, or almost all, individual damage calculations can be made using the same evidence and method, then a common damages method is available.
18. To determine individual impact and damages I compare a plaintiff’s economic position in the actual world, where the alleged misconduct occurred, with his or her economic position in the relevant counterfactual or “but-for” world, i.e., the world as it would have been had the alleged misconduct not occurred. As summarized by Allen, Hall and Lazear (2011), “The first step in a damages study is the translation of the legal theory of the harmful event into an

²⁴ *Comcast Corp. v. Behrend*, 133 S. Ct. 1426,1430 (2013) (“The District Court held, and it is uncontested here, that to meet the predominance requirement respondents had to show (1) that the existence of individual injury resulting from the alleged antitrust violation (referred to as ‘antitrust impact’) was ‘capable of proof at trial through evidence that [was] common to the class rather than individual to its members’; and (2) that the damages resulting from that injury were measurable ‘on a class-wide basis’ through use of a ‘common methodology.’”).

analysis of the economic impact of that event. In most cases, the analysis considers the difference between the plaintiff's economic position if the harmful event had not occurred and the plaintiff's actual economic position....Damages measurement then determines the plaintiff's hypothetical value in the but-for scenario. Economic damages are the difference between that value and the actual value that the plaintiff achieved.”²⁵

1. Common impact and common proof of impact

19. I consider *individual* impact (injury) to be a binary outcome: either a plaintiff is injured or not. An *injured* plaintiff is one who is worse off in the actual world than in the applicable but-for world, absent the alleged misconduct. In my understanding as an economist, if all or almost all plaintiffs suffer the same type of impact as a result of Defendant's actions at issue, then the *common impact* threshold for class certification is satisfied. I interpret *amenability to common proof* to mean that proof that one plaintiff was injured constitutes proof that all, or almost all, plaintiffs were injured.
20. In my opinion as an economist, common proof of class-wide impact requires demonstrating that 1) a given plaintiff, such as Mrs. LaPlant, would have had a better economic outcome in the applicable but-for world than in the actual world, and that 2) the same type of evidence used to show Mrs. LaPlant's injury also shows that all, or almost all, of the other class members would also have had a better outcome in the applicable but-for world than in the actual world.

²⁵ Allen, Mark A., Robert E. Hall, and Victoria A. Lazear, “Reference Guide on Estimation of Economic Losses in Damages Awards,” in *Reference Manual on Scientific Evidence*, The National Academies Press, 2011 (“Allen, Hall, and Lazear”), p. 432.

See also ABA Section of Antitrust Law, *Proving Antitrust Damages, Legal and Economic Issues*, 2nd Edition, American Bar Association, 2010, p. 53 (“The essential starting point for any damages quantification is the but-for premise that the defendant's violation did not occur. That premise is the foundation for constructing a hypothetical ‘but-for world,’ which, when compared to the plaintiff's actual experience, should isolate the effect of the violation on the plaintiff from the effects of all other events. A quantification of the difference between the plaintiff's experience in the but-for and actual worlds determines the amount of damages.”).

2. Common damages methodology

21. While I consider impact to be binary, I consider damages to be a “continuous” outcome, like temperature or weight. Calculating individual damages requires quantifying the difference in economic outcomes between the actual and the but-for worlds. In my opinion, the difference between rates of return in the actual and but-for worlds constitute the most meaningful measure of an individual’s changed economic position due to the alleged misconduct in this case. This difference, if found to be important, would then be used to compute damages based on facts such as the cash value of the policy, borrowed amounts, and date of termination. Using this measure, putative class members will have been injured if the return on their annuity investment in the actual world was less than the return on whatever investment program they might have implemented in the but-for world. Damages is the measure of the extent of that injury.
22. Calculating damages for any individual in this case requires two things: First, identification of the appropriate but-for world, reflecting the actions NM would have taken absent the alleged misconduct, and second, determination of the counterfactual returns to individual class members, based on their most likely course of action in this but-for world. For example, some NM annuitants in the but-for world might have contributed less to their NM annuities than they did in the actual world, or perhaps borrowed more from their policies in order to take advantage of higher returns elsewhere. For each individual annuitant, such alternative investment strategies would have to be identified and the returns on the alternatives quantified and compared to actual returns for each member of the class.
23. More generally, any damages calculation will require a combination of factual and behavioral evidence from both the actual and but-for worlds. Evidence about the actual world can often be gathered from existing records that include many important “actual world facts.” However, evidence about the but-for world is not so readily available. While some facts will be the same in both worlds, such as age and gender, others, particularly those related to individual investment decisions and the associated returns, will not. Evidence of much of the relevant behavior in the but-for world, particularly evidence regarding individual

investment decisions, is necessarily based on inferences made using economic theory and empirical evidence, and not amenable to determination via formula.²⁶

24. For damages to be determined for all class members on a class-wide basis, they must be quantifiable through a common, formulaic approach. For the formulaic approach to be common, it must “work” for every, or almost every, class member. For it to work for almost every class member, it must rely on the same factual and behavioral evidence from both the actual and the but-for worlds for each class member, and the gathering of this evidence must not require individualized inquiry.
25. To take a concrete example, consider named plaintiff Mrs. LaPlant. In order to compute how much more she would have earned in the but-for world than she did in the actual world, I would have to make predictions about her behavior in the but-for world. For example, I might, based on evidence from the record or from additional interviews, predict that Mrs. LaPlant would have terminated her policy sooner in the but-for world than she did in the actual world. This might be the case, for example, because she might have earned a lower return in the but-for world and terminated her policy earlier in order to earn a higher return elsewhere. To calculate her but-for returns, I would need to predict when she would have terminated her policy and where she would have invested her money in the but-for world. Using these predictions, I would calculate her but-for returns. I would then subtract her actual returns from her but-for returns in each year to arrive at an estimate of her annual lost returns.
26. If my predictions about the behavior of each annuitant in the but-for world are identical to my predictions about Mrs. LaPlant’s behavior, then proof that Mrs. LaPlant was injured would constitute proof that all class members were injured. If the predictions are not identical for other class members because, for example, some class members might have terminated, borrowed from, or reduced their contributions to their annuities in order to invest elsewhere in the but-for world in a manner different from Mrs. LaPlant, then the nature of the

²⁶ Statistical models that might be used to predict counterfactual behavior are, in the absence of a controlled experiment, fraught with econometric problems. See Angrist, Joshua D., and Alan B. Krueger, “Empirical strategies in labor economics,” in *Handbook of Labor Economics*, Vol. 3, 1999, pp. 1277-1366.

inquiry and the formula utilized do not work either as a common method of proof of impact or as a common method to compute damages.

27. A common damages formula can allow for differences in certain individual facts, observable in the actual world and invariant in moving to the but-for world, that act as inputs into the formula (e.g. individual class members have policies with different cash values). The dollar amount of damages can therefore differ by class member. However, the damages formula cannot depend on idiosyncratic, hypothetical evidence. If individualized inquiry is required to establish these hypothetical conditions (e.g., “what would you have done with your annuity policy?”), a common, formulaic approach to damages does not exist.

3. Characterization of the but-for world

28. A clear statement about the but-for world is an important step in a damages analysis. As described by Allen, Hall, and Lazear (2011), this includes “a statement about the economic situation absent the wrongdoing, with the defendant’s proper actions replacing the unlawful ones (the but-for scenario). Damages measurement then determines the plaintiff’s hypothetical value in the but-for scenario.”²⁷
29. In the present case, one central question for determining individual impact concerns which “proper actions” NM would have taken as alternatives to the action at issue that it did take in the actual world. This is a “common question,” applicable to all plaintiffs. It needs to be answered in order to set the context for evaluating how individual plaintiffs would have responded. There are at least three possible scenarios regarding the characterization of NM’s behavior in the but-for world:
- Notice Scenario: This but-for world is one in which the defendant, NM, directly informed the individual plaintiffs of its decision to invest in, and pay, policy dividends based on the segmented account. This but-for world is consistent with a finding that NM was entitled to change the policy but should have disclosed the change in a specific manner.
 - Consent Scenario: This but-for world is one in which NM requested approval from policyholders for the 1985 change. Using the ’83 change as a benchmark example,

²⁷ Allen, Hall, and Lazear, p. 432.

NM could have implemented the 1985 change only for those policyholders who approved it, which could in turn affect the dividends of all policyholders. This but-for world is consistent with a finding that NM needed approval from policyholders to modify how their annuity dividends were calculated.

- No Change Scenario: This but-for world is one in which NM made no change in how it determined dividends for the pre-MN annuity policies.²⁸

30. The central question for determining individual impact concerns what action(s) each annuitant would have taken in response to NM's behavior in the but-for world. Possible annuitant responses include at least the following, each of which requires a different approach to computing the difference in returns and therefore impact:

- Retain the pre-MN NM annuity with no change to contribution or borrowing levels over time relative to what they did in the actual world.²⁹
- Retain the pre-MN NM annuity while changing either the level of contributions or the borrowing level relative to what they did in the actual world. In order to examine impact and calculate damages in this circumstance, I would need to know the timing and the magnitude of the change for each annuitant, as well as the alternative use to which the annuitant would have put the extra cash at his or her disposal. For example, annuitants could increase their borrowing (in varying amounts across annuitants) in order to invest in an alternative vehicle with a higher return.
- Terminate the pre-MN annuity and transfer its cash value to a different investment vehicle. In order to examine impact and calculate damages in this circumstance, I would need to know the termination date and the returns on the new, alternative investment for each annuitant who took this action.

31. I conduct my analysis below for each of the three baseline scenarios regarding NM's behavior in the but-for world outlined above. I then consider what actions annuitants might have taken in response to each scenario, using available deposition testimony and documentary evidence concerning annuitant behavior in the actual world.

²⁸ This is the but-for world regarding NM's behavior advanced by Plaintiffs' expert. See Hoyer Report, ¶54 ("This report quantifies the DIRs which would have been credited to Pre-MN annuity policyholders But-For the 1985 Change.").

²⁹ This appears to be the sole plaintiff response considered by Mr. Hoyer. See Section VI.C.1. below and Hoyer Report, ¶7 ("Prospective relief involves NML crediting to Pre-MN annuity policyholders' accounts the additional amount that would have accumulated 'But-For' the 1985 Change....").

D. Summary of Opinions

32. I have three principal conclusions. First, regardless of the appropriate baseline scenario regarding NM's behavior in the but-for world, I find that the economic facts and evidence are inconsistent with a finding that all putative class members suffered injury, much less a common injury. For example:
- Had NM disclosed the 1985 change, the evidence indicates that some putative class members would have behaved the same way they did in the actual world. These individuals would have the same outcome in the but-for world as they had in the actual world and therefore are uninjured.
 - Had NM sought approval for the 1985 change, the evidence suggests that some putative class members would have approved the change and behaved the same way they did in the actual world. These individuals would have the same outcome in the but-for world as they had in the actual world and therefore are uninjured.
 - Had NM not made the 1985 change, the evidence suggests that, absent any difference in behavior, approximately 30 percent of the class were not financially injured by the 1985 change.
33. Second, I find that damages cannot be computed for all putative class members using a common methodology. In each of the three baseline scenarios, the evidence suggests that some policyholders' behavior would have been different in the but-for world because of disclosure or because they would have faced but-for dividend interest rates that would have been different than the actual world dividend interest rates. Those policyholders whose behavior would have been different might have suffered damages, but the extent of their financial harm depends on their behavior in the but-for world. For example, some might have terminated their policies earlier, while others might have altered their premium payments. Without individualized inquiry, it is not possible to determine the financial injury suffered by each policyholder. Furthermore, the determination that one policyholder would have been injured in this scenario tells us nothing about whether any others would also have been injured.
34. Finally, I note that Mr. Hoyer's Expert Report does not address the issue of class-wide proof of common impact, and I conclude that it does not provide a common method for calculating damages. In fact, Mr. Hoyer's calculations and his deposition testimony *confirm* my affirmative opinion that impact was not common. His results indicate that up to 30 percent of pre-MN policyholders might have suffered no financial injury as a result of the 1985

change. Mr. Hoyer's analysis is incomplete because he considers only one of several possible but-for worlds regarding NM's behavior. He does not take into account that policyholder behavior might have been different in the but-for world than in the actual world. In addition, Mr. Hoyer makes several errors in his calculation of differences in returns.

II. BACKGROUND RELEVANT TO ANALYSIS

A. Economics of Annuities and Investing

1. At-issue annuities

35. An annuity is a contract with a life insurance company that guarantees payments at regular intervals for a particular period of time. It provides the annuitant with a minimum income guarantee, with the minimum level depending on the level of contributions to the annuity.³⁰
36. The annuities at issue in this case are "deferred" annuities. The annuitant contributes to the policy during an accumulation period and receives payments from the policy during the distribution period. The annuities at issue have several characteristics that make them potentially attractive investment vehicles: annuities offer a guaranteed minimum investment return; annuitants can terminate their policy and withdraw the cash value of accumulated funds; contributions to some annuities are tax-deferred; and annuitants can borrow a portion of the cash value of the policy at a contractually determined interest rate.³¹
37. The annuities at issue were also customizable; policyholders had a wide variety of choices in purchasing and managing their policies. Exhibit 5 presents selected characteristics of the at-issue annuities that can vary across policies. For example, annuitants could choose whether to purchase an FPA or an SPRA. Annuitants could choose a dividend payout option and a maturity option.

³⁰ For general background information on annuities, see U.S. Securities and Exchange Commission, "Annuities," April 6, 2011, available at <<http://www.sec.gov/answers/annuity.htm>>, accessed on June 17, 2013. Also, see Sullivan, Paul, "Annuities: What You Need to Know," *The New York Times*, January 27, 2009, available at <<http://www.nytimes.com/2009/01/28/your-money/annuities/primerannuities.html?ref=annuities>>, accessed on June 17, 2013.

³¹ See Trial Exhibit 121, LaPlant Contract; Trial Exhibit 189, Dividend Interest Rate Tables.

38. In addition to the loan rate, NM annuity policies specified fees related to administrative and transaction costs that the company charged to its policyholders. For example, named Plaintiff Marleen LaPlant's annuity contract specified a front-end load fee of 10% per premium payment, a \$0.50 "collection charge" per premium payment, and a \$10 per year "policy fee."³²

2. Economics of investing

39. Financial economists define investment to be the purchase of an asset with the goal of accruing pecuniary returns from this asset in the future.³³ Two principal characteristics of any financial asset are risk and return.³⁴ Return is the growth rate (percent change) in the value of the asset per unit of time. Risk measures are based on variability in the return.
40. Investor preferences are classified as either risk-averse, risk-neutral, or risk-loving. Risk aversion is defined as a preference for less variability at any given level of return.³⁵ The typical assumption in the finance literature is that investors are risk-averse. Risk aversion is empirically consistent with observed behavior in most contexts.³⁶ Risk preferences, including the degree of risk-aversion, vary widely across investors.³⁷

³² See Trial Exhibit 121, LaPlant Contract.

³³ See, for example, Downes, John and Jordan E. Goodman, *Dictionary of Finance and Investment Terms*, Barron's Educational Series, 2010, pp. 366-367.

³⁴ Depending on the context, returns can either be expected returns (i.e., those that will likely accrue in the future) or "historical" returns (i.e., those actually earned in the past). I will use "return" for each, unless the use of the modifying adjective is called for.

³⁵ See, for example, Holt, Charles A. and Susan K. Laury, "Risk Aversion and Incentive Effects," *The American Economic Review*, Vol. 92, No. 5, Dec., 2002 ("Holt and Laury"), pp. 1644-1655.

³⁶ See, for example, Holt and Laury, pp. 1649-1654.

³⁷ Vitt, Lois A., "Risk Tolerance," in *Encyclopedia of Retirement and Finance*, Vol. 1, Greenwood Publishing Group, Inc. 2003, p. 688 ("Subjective risk tolerance varies by age, gender, education, and other factors. However, financial advisors should not assume that any unique individual shares the average characteristics of his or her group—for instance, among older Americans—there is a wide variation of subjective and objective risk tolerance.").

41. Portfolio theory shows how it is possible to construct a set of asset portfolios that maximize expected return at every given level of risk.³⁸ Higher expected return portfolios will entail higher risks. The particular portfolio chosen from this set by an individual investor will depend on that individual's attitudes towards risk and expected return, with more risk-averse investors tending to choose safer, less risky portfolios.³⁹
42. Another characteristic that determines demand for a particular asset is its liquidity, or how easy it is to get cash out of the investment. Because more liquidity is preferred to less, less liquid assets will pay a premium over more liquid assets in equilibrium. Important determinants of the demand for liquidity include the investor's time horizon and expectations about the future rate of inflation, which vary across individuals. Therefore, the demand for liquidity will vary across individual investors.⁴⁰
43. In sum, investors will construct portfolios consistent with their preferences for expected return, risk, and liquidity, given that assets with higher expected returns are associated with higher risks and may be associated with lower liquidity. One investor might put all his or her money into low risk-low expected return Treasury bonds, and another might put all his or her money into high risk-high expected return stocks. Yet another might construct a portfolio that combines the two.
44. Many investors include annuities as part of a larger investment portfolio, which would be constructed in its entirety to generate expected returns with a risk/return profile consistent with the preferences of the investor. The academic literature in finance provides evidence that individual investors will seek to rebalance their investment portfolios in response to changes in relative rates of return or risks on different assets within and outside their

³⁸ For a detailed explanation of risk, return and diversification, see Brealey, Richard A. and Stewart C. Myers, *Principles of Corporate Finance*, McGraw-Hill, Inc., 1991, 4th Edition ("Brealey and Myers"), Chapter 7.

³⁹ For additional background on investment, risk and return, see Brealey and Myers.

⁴⁰ Marquard, Steven, *The Distortion Theory of Macro-Economic Forecasting: A Guide for Economists and Investors*, Greenwood Publishing Group, Inc. 1994, p. 41 ("[T]he liquidity preference ratio, the ratio between an individual's cash balance and the market value of his physical good.... varies from individual to individual just as any other valuation of different options does. Variations reflect different shapes of individuals' revenue lines and different personal time preferences. Each of these trace to personal natures and circumstances.").

portfolio.⁴¹ Economic analysis also shows, in particular, that investors will decrease their contributions to pensions when the expected rate of return on other forms of savings increases relative to the expected rate of return on pension deposits.⁴²

B. NM's 1985 Change

45. NM's decision to change the basis for calculation of returns to pre-MN annuities in March of 1985 was implemented in response to a change in the economic environment. In the early 1980s, shorter term investments were earning more than longer term investments.⁴³ NM's investment portfolio was concentrated in longer term investments, and the Dividend Interest Rate ("DIR"), which formed the basis of its calculation of returns to both insurance and annuities up to that point, reflected the lower long term returns.⁴⁴
46. According to NM, some NM annuitants responded to changing relative interest rates by reducing premium payments and increasing policy surrenders.⁴⁵ In other words, they apparently took their funds out of NM accounts in order to earn a higher return elsewhere.⁴⁶

⁴¹ See, for example, Rosen, Kenneth T. and Larry Katz, "Money Market Mutual Funds: An Experiment in Ad Hoc Deregulation: A Note," *The Journal of Finance*, Vol. 38, No. 3, Jun., 1983, pp. 1011-1017; Gibson, William E. and James L. Pierce, "Deposit Demand, 'Hot Money,' and the Viability of Thrift Institutions," *Brookings Papers on Economic Activity*, Vol. 1974, No. 3, 1974, pp. 593-636.

⁴² Bernheim, B. Douglas and John B. Shoven, Pension Funding and Saving, in *Pensions in the U.S. Economy*, Zvi Bodie, John B. Shoven and David A. Wise (Eds.), University of Chicago Press, 1988, pp. 85-114.

⁴³ See, for example, Downes, John and Jordan Elliot Goodman, *Dictionary of Finance and Investment Terms*, Barron's Educational Series, 2010, p. 366. ("Normally, lenders receive a higher yield when committing their money for a longer period of time; this situation is called a POSITIVE YIELD CURVE. An inverted YIELD CURVE occurs when a surge in demand for short-term credit drives up short-term rates on instruments like Treasury bills and money-market funds, while long-term rates move up more slowly, since borrowers are not willing to commit themselves to paying high interest rates for many years. This situation happened in the early 1980s, when short-term interest rates were around 20%, while long-term rates went up to only 16% or 17%. The existence of an inverted yield curve can be a sign of an unhealthy economy, marked by high inflation and low levels of confidence.").

⁴⁴ Plaintiff's Brief, Appendix Exhibit 39, "Explanation of 1986 Dividend Scale for MM and Prior Series Deferred Annuities," p. 2 ("The company experienced very heavy surrenders on annuities during 1981 and 1982 when the long-term portfolio interest rate got so far out of line with prevailing interest rates in the marketplace.").

⁴⁵ Employee Plans Product Development Committee, "July 29th Meeting Minutes," ML2_NM_4552 to ML2_NM_4569 at ML2_NM_4553.

⁴⁶ "MN Series Annuities – Product Information Release," ML_NML2_0513 to ML_NML2_0519 at ML_NML2_517 ("We believe that, over the long term, an annuity owner may be more satisfied with an

This led to concerns on the part of NM regarding withdrawals in excess of reserves. Insurance companies, in structuring their investment portfolios, will invest a portion of policyholder premiums, leaving the remainder available for withdrawals, policy loans, and terminations.⁴⁷ With terminations accelerating, NM (and other insurance companies) faced an increased risk that it would have to liquidate long term investments in order to meet short term demands for funds.⁴⁸ Early liquidation of long term investments can often lead to losses, which would reduce the surplus available to all policyholders. In order to address this “disintermediation” problem, NM created a segmented fund of short to medium term assets that would provide the basis for the returns to Pre-MN annuities.⁴⁹ The fact of disintermediation, in addition to regulatory requirements,⁵⁰ thus elicited the 1985 change.

investment that more closely tracks the interest rates with which he is most familiar – ‘new money’ CDs, U.S. Treasury bills, etc. – than an investment based on a longer term portfolio which can vary substantially from those ‘familiar’ rates....Increasingly over the past 20 years, Northwestern Mutual’s annuity products have failed to meet annuity policyowners’ expectations for an interest rate that moves up with ‘current rates.’ For 13 out of the last 19 years, NML’s annuity dividend interest rate has been below the ‘current rate’ as measured by the one year U.S. Treasury bill yield....As the difference between the portfolio rate and the policyowner’s expectations for ‘current rates’ got larger and larger, and as policyowners became increasingly aware of ‘current rate’ alternatives, surrenders increased and new sales decreased to the point that surrenders exceeded premium for new annuity sales by a margin of 19 to 1 in 1981.”).

⁴⁷ Bardrinath, SG, Jayant R. Kale and Harley E. Ryan, Jr., “Characteristics of Common Stock Holdings of Insurance Companies,” *The Journal of Risk and Insurance*, Vol. 63, No. 1, Mar., 1996, p. 49 (“At the most fundamental level, an insurance company buys risk from an individual or an institution for which it is paid a premium. These premiums are received from a large number of clients, and claims are paid to a significantly smaller number. In other words, the insurer receives a steady stream of relatively small periodic premiums, and its relatively larger liabilities occur randomly. These contingent liabilities to be paid will come partly from its equity base but primarily from the accumulated premiums. For the company to be in a sound financial position, therefore, these premiums must be invested in a manner such that it is easily able to honor these claims.”).

⁴⁸ Bardrinath, SG, Jayant R. Kale and Harley E. Ryan, Jr., “Characteristics of Common Stock Holdings of Insurance Companies,” *The Journal of Risk and Insurance*, Vol. 63, No. 1, Mar., 1996, p. 68 footnote 21 (“On several different occasions in the last 20 years, inflation and high interest rates have forced life insurance companies to accommodate extraordinary cash outflows. As interest rates reached record levels in the 1980s, policyholders took advantage of the option to borrow some or all of the cash value in their policies at below-market loan rates as permissible in the policy contract. This, coupled with the surrender of policies for cash value, may have heightened the preoccupation of insurance company portfolio managers with steady cash flow sources, even though they are, in theory, long-term investors.”).

⁴⁹ See Trial Exhibit 356, a letter from Mr. William E. Ebel, a Northwestern Mutual Life General Agent, to an annuity holder (“The experience of the recent past led us to establish a separate segmented portfolio for annuities and move to a current rate basis for new issues. We have been concerned for some time about the severe disintermediation, or investment anti-selection, that we were experiencing on the part of our annuity

47. Relevant but-for worlds can keep the 1985 change intact but alter the manner in which information about the change was conveyed. Alternative but-for worlds, such as one in which NM made no change and let the disintermediation continue, can also be evaluated. In each instance, the analysis must ask 1) whether all annuitants were injured, and 2) whether damages can be computed using a common formula or methodology, given the assumed counterfactual. For purposes of my report, I am assuming *arguendo* that plaintiffs' allegations about NM's conduct in the actual world are correct.

III. ANALYSIS ASSUMING NM IMPLEMENTS AND PROVIDES NOTICE OF THE 1985 CHANGE

48. One possible but-for world is one in which NM makes the change in annuity dividend calculations and informs its policyholders of the change directly.⁵¹
49. In this but-for world, determining impact for any given policyholder would depend on whether being notified of the 1985 change affects the behavior of that policyholder. A plaintiff who would have done the same thing if directly notified of the 1985 change (the but-for world) as he did in the actual world cannot have been injured, since the but-for and actual returns for this investor would be identical. Furthermore, a plaintiff who would have changed his behavior if notified would only have been injured if his alternative strategy in the but-for world would have made him better off than in the actual world. Since but-for

policyholders and annuity purchasers. During times when new-money rates were particularly high, compared to our portfolio rate, we saw significant increases in the surrender of annuity values. Similarly, at times when new-money rates were lower than our portfolio basis, we saw a significant increase in new premium. These kinds of actions coupled with a portfolio-based approach which reflects the longer-term, less volatile investment pattern for life insurance produces negative results for the annuity policyowners, and also for our life policyowners. The net impact is to reduce the overall portfolio rate as a result of having fewer funds available to invest at high interest rates and more funds to invest when rates are lower....As noted, we have been concerned and seeking a solution for this problem for some time. We decided that the best way to deal with it was to develop a current-rate-based annuity for new sales. But this only satisfies half the problem. We also needed to move our portfolio-based inforce annuities to a similar interest basis in order to avoid the other half of the investment anti-selection.").

⁵⁰ Plaintiff's Brief, Appendix 39, "Explanation of 1986 Dividend Scale for MM and Prior Series Deferred Annuities," p. 2. ("The New York Insurance Department passed a law this last summer requiring penalty reserves for companies that are mismatched by more than three years. Segmented accounts are necessary to comply with these requirements.").

⁵¹ As described below, there is evidence that some annuitants were, in fact, informed of the change.

returns can only be determined through the analysis of individual responses to notification of the change, proof of impact here is individualized rather than common.

A. Establishing Impact Requires Individualized Inquiry

50. NM communicates with its policyholders both directly through mailed statements and disclosures and indirectly through independent contractor agents.⁵² The evidence presented below suggests that even had NM notified all plaintiffs via direct communication of its decision to invest in and pay policy dividends out of the segmented account, some class members would not have altered their behavior and therefore are not injured.

1. Some class members might not have behaved differently because they knew about the 1985 change in the actual world

51. Some putative class members knew about the change in the actual world even without a formal disclosure and did not change their behavior. Thus their behavior in the actual and but-for worlds would be the same. These individuals suffered no financial impact.
52. Some annuitants were informed about the 1985 change by their NM insurance agent, or through direct communication with the company. For example, agent Michael Holden testified that he received information in 1985 regarding the 1985 change, and that he was certain that he discussed the new MN series annuities with his clients.⁵³ While some annuitants might have learned of the 1985 change from their agents, others received direct

⁵² For instance, policyholders were informed of "Update '83" via a letter and an accompanying informational brochure (see Trial Exhibit 312, Documentation associated with Update '83, September 28, 1983). Policyholders also received annual reports from Northwestern Mutual and had periodic contact with their agents (see Deposition of William J. Timmers, July 23, 2010, p. 14:19-23, "Q. Do you know whether you receive an annual report from Northwestern Mutual that's not your account statement but a general report on the company? A. You know, I used to, but lately I don't know if I have or not, but I used to..." Deposition of Janet Reichart, June 16, 2010, p. 14:12-14 "Q. Did you receive annual reports from Northwestern Mutual? A. An annual report, yes." Deposition of John Komives, May 18, 2010, p. 18:4-11 "Q. How often do you meet with Mr. Gardner? A. Once a year. Q. And that's an in-person meeting? A. No, in the last seven or eight years it's -- he sends me an update on my policies and asks if there's any reason for us to get together. He's open to -- he's invited me to chat with him, but I haven't felt the need.").

⁵³ Deposition of Michael J. Holden, May 25, 2010, p. 31:15-22 ("Q. ...Do you remember receiving information in 1985 regarding the new MN series annuity? A. I'm sure -- I'm sure I did, yes. Q. Okay. Do you remember having any discussions with any of your clients regarding the new MN series annuities? A. I'm sure I did, but I have -- I can't remember who or what was said.").

communication regarding the change from NM in the form of letters or email.⁵⁴ If annuitants did not change their behavior after learning of the change in the actual world, this suggests that they might not have changed their behavior when notified (possibly at an earlier point in time) in the but-for world either and therefore are uninjured.

53. Some annuitants noticed the 1985 change because they owned other NM policies that were yielding returns different from those on their pre-MN policies. For example, Daniel Noonan noted the difference between the annuity dividend rate and the dividend rate on his NM insurance policy “sometime in early 2000.”⁵⁵ Exhibit 3 shows the number of class members with life and annuity policies in-force in the same year during the class period, as well as the total number of class members who own a life insurance policy as of 2012. Approximately 53.5 percent of the putative class simultaneously owned a pre-MN annuity and a life insurance policy at some point during the class period. Whether and when each of these investors noticed the change in dividend rates through a comparison of dividend rates across policies, and whether each would have behaved differently if notified by NM at some time prior to the fact of noticing the difference, is an individualized question.

2. Some class members might not have behaved differently because they would have chosen not to review disclosures

54. Empirical evidence indicates that some consumers do not conduct a thorough review of contracts that they sign and disclosures and financial statements that they receive. For

⁵⁴ See, for example, a June 7, 1990 letter from NM to annuitant, an April 7, 1998 email from NM to annuitant and a September 14, 1999 letter from NM to annuitant as cited in Northwestern Mutual’s Memorandum in Opposition to Plaintiff’s Motion for Class Certification, *Beverly E. Krueger, on behalf of themselves and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, Case No. 1:10-cv-00128-SPM, April 15, 2011, pp. 116-119. At least one of these annuitants continued to hold the annuity through at least 2012 without withdrawals or any change in borrowing.

⁵⁵ Testimony of Daniel Noonan, November 8, 2010, p. 66:24-25 and p. 67:4-15 (“Well, as I communicated with Dan - Madigan, that is - I had noticed a disparity between the rate of return or the amount of dividends which I hadn't picked up on earlier, but I had noticed that there was a disparity because the premise upon which we had been proceeding for many years is that these annuities would always pay. The beauty of these he would say and the company would say well, the beauty of these annuities, they pay the same portfolio rate, same dividend interest rate as the cash surrender value rate that's paid on whole life policies. That was the beauty. That's how they were sold. So I noticed a difference. I said well, Dan, what's – what's the problem here?”).

example, a survey in the UK showed that only 23 percent of consumers “had a good read” of contracts before entering them. The remainder picked out key points, gave it a quick “skim” read, did not read it at all or didn’t remember.⁵⁶ In other words, some NM policyholders were likely to read carefully through all communications from NM while others were not. Even among those who would have read a disclosure, the changes in their behavior would have varied. Those who would not have read a disclosure would behave similarly in both the actual and but-for worlds, and therefore could not have been injured. Without individualized inquiry, it is impossible to determine whether an individual class member would have read or acted upon a notification of the 1985 change in the but-for world.

55. Depositions of members of the putative class confirm that some read statements and reports from NM, while others did not. Janet Reichart testified that she read her annuity policy and looked at both her annual annuity statements and annual reports received from NM.⁵⁷ Caroline Meckes testified that she did not remember reading her policy.⁵⁸ William Timmers testified that he did not read his annuity policy or annual reports received from NM.⁵⁹

⁵⁶ Office of Fair Trading, “Consumer Contracts,” Crown Publishing, February 2011, p. 27.

⁵⁷ Deposition of Janet Reichart, June 16, 2010, p. 13:9-14 (“Q. ... did you receive on an annual basis a statement from Northwestern Mutual setting forth your annual dividend for your annuities? A. Yes, I’m sure I did. Q. Do you know whether you reviewed those or not? A. I looked at them, yes.”); p. 14:12-16 (“Q. Did you receive annual reports from Northwestern Mutual? A. An annual report, yes. Q. Did you ever review the annual report? A. I looked at it, yes.”); p. 20:9-12 (“Q. Okay. Did you ever read the policy that you received from Northwestern Mutual when you purchased your annuities? A. I’m sure I did.”).

⁵⁸ Deposition of Caroline Meckes, June 10, 2010, p. 8:8-19 (“Q. Do you remember reading that provision at the time you purchased the policy? A. I don’t remember reading the policy at all, you know. Perhaps I did, but we’re talking quite a few years ago. Q. So your understanding that you’re conveying now regarding the dividends is your current understanding of dividends? A. I guess I never expected that there would be a problem with Northwestern. I trusted them and thought the dividends would be there. I trusted Dean Lawrence and I trusted the company.”).

⁵⁹ Deposition of William J. Timmers, July 23, 2010, p. 9:14-18 (“Q. Do you remember whether you read the policy for your annuity when you received it? A. No, I didn’t. Q. No, you did not review it? A. No, I did not review it, no. I trusted the agent.”); p. 14:19-25 (“Q. Do you know whether you receive an annual report from Northwestern Mutual that’s not your account statement but a general report on the company? A. You know, I used to, but lately I don’t know if I have or not, but I used to. Q. When you received those, did you read them? A. No.”).

Jacqueline Baumgart testified that she did not read her annuity policy.⁶⁰ John Komives testified that he didn't feel "compelled" to read his policies.⁶¹

56. Class-wide evidence cannot identify which individual plaintiffs would have read a disclosure statement from NM. A determination that one plaintiff would have read the disclosure does not determine whether another plaintiff would have done likewise.

3. Some class members might not have behaved differently having reviewed a disclosure of the 1985 change

57. Some class members would have read a disclosure of the 1985 change, had NM sent one directly to each annuitant. Of these, some might have decided to retain their annuity policies with the restructured investment pools, and thus their behavior in the actual and but-for worlds is the same. These individuals suffered no injury.
58. Informed annuity holders might have retained their policies for several reasons, including 1) an understanding of, and agreement with, NM's analysis; 2) a deference to NM's approach; and 3) a concern for returns on other investments. Consider an individual who is contemplating terminating his or her policy in order to invest in higher-yielding short term securities. Upon hearing that NM is going to do just that with his or her asset portfolio, the investor decides to do nothing, leaving the policy intact. Alternatively, the individual might delegate the investment allocation decisions to NM based on NM's reputation and experience. In another example, consider an investor who held both a whole life policy and an annuity who might have been concerned about the risks that disintermediation presented

⁶⁰ Deposition of Jacqueline Baumgart, June 16, 2010, pp. 10:25-11:9 ("Q. Back in 1983 when this annuity was purchased did you read the policy when it was finally purchased? A. No. Q. To your recollection have you ever read the policy, your annuity policy? A. No. Q. Did you ever speak with anyone at Northwestern Mutual after the annuity was purchased, so after 1983, regarding that annuity policy? A. No.").

⁶¹ Deposition of John Komives, May 18, 2010, pp. 36:13-37:2 ("Q. ...Do you recall reading any of your policies at the time you received them, the original policies from Mr. Moser or anyone else from Northwestern Mutual? A. I don't recall, but I'm sure that I glanced through it. I always felt so comfortable with NML that I never felt the need to behave in an adversarial -- I accepted the way it was presented. Q. I'm sorry, I didn't understand the last part of your answer, sir. A. I always felt so comfortable with NML I never felt compelled to read something in an adversarial fashion, what the hell is this kind of routine. I accepted when he handed me the piece of paper, I was comfortable with it.").

for the divisible surplus as it applied to both policies and thus agreed with NM's solution to the problem.

59. Common evidence cannot reveal which plaintiffs would have reacted to a notification about the 1985 change by changing their investment behavior, and which would have retained their policies either because of or despite the 1985 change. Neither can common evidence tell us where those plaintiffs who would have changed their behavior would have invested their funds. Determination that plaintiff A would have cashed out of the altered annuity in the but-for world says nothing about whether plaintiff B would have done likewise.

B. For Those Who Would Have Behaved Differently in the But-For World, Estimating Damages Requires Individualized Inquiry

60. Annuitants who were not aware of the 1985 change and would have changed their behavior had they received notice of the change are potentially injured. Estimating damages for such annuitants requires knowing how their behavior would have changed individually had they received such notice. Determining what an individual annuitant would have done is complicated by the fact that different responses are possible and economically plausible. Some annuitants might have terminated their policies and reinvested the withdrawn funds in another investment product. But others might have kept their NM policies and responded by, for example, reducing their premium payments or increasing borrowing against the cash value of their policy. For all types of responses, estimating damages requires assessing what alternative investments would have been selected so that the but-for return could be calculated.

IV. ANALYSIS ASSUMING NM SEEKS APPROVAL FOR THE 1985 CHANGE

61. Another possible but-for world is one in which NM seeks approval for the 1985 change in annuity dividend calculations. Using Update '83 as a reference, NM could have implemented the change only for those policyholders who approved it. Any policyholder who would have approved the change was not injured.
62. Some class members might have agreed to the at-issue change and made the same choices had NM sought approval. These class members would not be injured by the change. Individualized inquiry is needed to determine which policyholders these are.

63. For those policyholders who would not have agreed to the change and may have been injured, damages depend on how their behavior would have been different given the alternatives NM provided for them. Since policyholders would have behaved in myriad ways that cannot be identified using class-wide evidence, estimating damages requires individualized inquiry.

A. Establishing Impact Requires Individualized Inquiry

64. Even if NM sought approval from policyholders for the change in the pre-MN annuity policy, some plaintiffs might have approved the change and therefore not been injured.

1. Some class members might have approved the change without reviewing it

65. As described above, not all annuitants carefully review the documents and disclosures sent to them by NM. Some prefer not to take the time. Such annuitants tend to go along with suggested changes in policy.
66. Class-wide evidence cannot reveal which annuitants would approve the 1985 change, nor which would review the change and reject it.

2. Some class members might have approved the change because they agreed with it

67. Those policyholders who were aware that short term interest rates were higher than long term interest rates during the time period before the 1985 change might have approved the change given the opportunity. It is this same group of annuitants that NM was worried would switch to the newly created CRA policies. Exhibit 4 shows the number of class members who purchased CRAs once they became available.
68. The fact that some policyholders learned of the change during the class period but did not liquidate their policies in order to earn a higher rate of return elsewhere, indicates that the 1985 change might have been accepted by a number of putative class members.

69. Class-wide evidence cannot reveal which policyholders would have agreed to the 1985 change because investment preferences are idiosyncratic and variable. Determination of impact is thus individualized.

B. For Those Who Would Not Have Approved the 1985 Change, Estimating Damages Requires Individualized Inquiry

70. Estimating damages for putative class members who might have been injured requires determining how they would have changed their premium payments, borrowing and timing of termination and identifying what alternative investments are likely to have been undertaken. For the same reasons articulated in Section III.B, above, without knowledge of the risk tolerance and investment goals of the putative class members, it is not possible to identify how potentially injured class members would have behaved with regard to contributions, borrowing or termination of annuity contracts in the but-for world.

V. ANALYSIS ASSUMING NM DOES NOT IMPLEMENT THE 1985 CHANGE

71. The third but-for world is one in which pre-MN annuities continue to earn dividends based on the returns of the non-segmented, general account of the company. In other words, NM makes no policy change to address the disintermediation that was occurring in its existing portfolio of annuities.

A. Many Members of the Putative Class Were Not Injured in this Scenario

72. Even assuming that in the but-for world NM would have continued paying annuitants based on a non-segmented general account, many annuitants were not injured and some were economically better off in the actual world than they would have been in the but-for world.
73. Plaintiff's expert, Mr. Hoyer, claims that but-for the 1985 change pre-MN annuity holders would have received the same DIR as life insurance policyholders.⁶² However, in the actual world, cumulative returns to the pre-MN annuities from 1985 until 1993 were higher, on

⁶² Hoyer Report, ¶24 ("The But-For DIR, in my opinion, for Pre-MN annuitants who have Direct Recognition and have no loan balance is equal to the corresponding DIR for life insurance policyholders.").

average, than cumulative returns to NM life insurance policies. Many pre-MN annuitants whose policies matured or were terminated prior to the beginning of 1994 thus might have earned a higher rate of return in the actual world than they would have absent the 1985 change. They are therefore better off in the actual world than in the but-for world, and so were not injured by NM's alleged misconduct.

74. Exhibit 6 compares pre-MN annuity and life DIRs, for policies with direct recognition and no policy borrowing, in the time period from 1985 to 1993. Exhibit 7 shows the percentage point spread in DIRs. For most of this time period, the annuity DIR is the same as or higher than the life DIR. Even using Mr. Hoyer's benchmark for the but-for DIR, there are a number of years during which annuitants would earn more in the actual world than they would have in the but-for world. This is apparent from the tables created by Mr. Hoyer to display his "differences" calculations. Exhibit 8 shows one of these tables for the years 1985 to 1994, a portion of the table that Mr. Hoyer does not include in his Expert Report. (The complete tables for the four scenarios presented by Mr. Hoyer are shown in Appendix Exhibit 1.)
75. Exhibit 8 demonstrates that, using Mr. Hoyer's benchmark, annuitants who terminated their policies in 1985 or any year from 1988 to year-end 1993 are likely to have earned a higher or equal return on their annuity policies in the actual than in the but-for world without the 1985 change. As shown in Exhibit 9, nearly 30 percent of the at-issue annuities were terminated in these years.
76. This analysis might understate the number of putative class members who were uninjured because it is possible that the returns to pre-MN annuity policies would have been lower than the returns to life insurance policies had the 1985 change not occurred. First, as a simple factual matter, the pre-MN annuity DIR was lower than the life insurance policy DIR in five of the nine years for which data are available prior to the 1985 change, as shown in Exhibit 10. Second, the DIR for any particular type of policy is a function of the expenses that NM

allocates that policy type.⁶³ I understand that had the 1985 change not taken place, NM contends it would have increased the expenses allocated to pre-MN annuities, further lowering returns to the pre-MN annuities relative to life insurance policies.⁶⁴

B. Establishing Impact Requires Individualized Inquiry

77. Investors generally seek to maximize returns for a given level of risk, and will therefore compare the current rate of return on their asset holdings with those available on similar alternative assets.⁶⁵ The greater the return differential, the higher the likelihood that a given investor will sell the existing asset, and reallocate funds to the alternative. This decision depends on idiosyncratic factors.
78. If higher rates of return are available on comparable alternative investments, NM annuitants might choose to cash in their policies and invest their money elsewhere. NM observed this behavior during the time period leading up to 1985, motivating the 1985 change. Between 1985 and 1993, as can be seen in Exhibits 6 and 7, even using Mr. Hoyer's benchmark there were several years during which putative class members' returns on the NM annuity would have been lower in the but for than in the actual world. In these time periods, it is therefore also the case that the differential between annuity returns in the but-for world and returns on alternative investments would have been greater. As a result, some annuitants during this time period would have been more likely to terminate their policies, decrease their premium

⁶³ See, for example, Plaintiff's Brief, Appendix Exhibit 39, "Explanation of 1986 Dividend Scale for MM and Prior Series Deferred Annuities," p. 1 ("First of all, the life insurance dividend interest rate is based on a gross interest rate of 11.75% less 0.50% for federal income taxes. The gross interest rate for annuities is 11.70%, only five basis points less, less a deduction of 0.20% for federal income taxes and 0.50% for home office expenses. This home office expense factor is a consequence of the competitive marketplace for annuities which limits loads deducted from premium payments so that insurance companies must recover some expenses out of interest margins. This is not the case for life insurance.").

⁶⁴ Affidavit of Chris G. Trost, *Beverly E. Krueger, on behalf of themselves and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, Case No. 1:10-CV-00128-SPM, April 15, 2011, ¶4 ("...if Northwestern Mutual had decided not to use segmentation, or if Northwestern Mutual were prohibited by the court from using segmentation, the Company would have assessed expense, disintermediation and dilution charges on the annuity dividend interest rates, which would have led to different final rates than the rates paid on life insurance products.").

⁶⁵ For additional background on investment, risk and return, see Brealey and Myers.

payments, or borrow more from their policies in the but-for world in order to invest elsewhere. It is thus incorrect as a matter of economics to assume that all class members would have continued as before, earning the returns observed on NM's portfolios in the but-for world. Some would have terminated their NM annuity policies and earned more elsewhere.⁶⁶

1. Investors respond to differentials in the rate of return

79. NM documents produced in this matter are consistent with a relationship between annuitant behavior and the level of returns on alternative investments relative to the returns on pre-MN annuities.⁶⁷ The minutes of an NM Employee Plans Product Development Committee meeting, dated July 1982, state as follows: "This is an interest rate driven market...In the last four years, our sales have declined sharply as the average 90-day Treasury Bill rate has become 3 to 6 percentage points higher than our FPA dividend rate." The minutes further document "increasing surrenders and declining in-force FPA and RA business as the difference between our dividend interest rate and the 90-day U.S. Treasury Bill rate rose."⁶⁸
80. The academic literature summarized above in Section II.A provides supporting evidence that individual investors allocate their financial assets according to relative rates of return.⁶⁹ Rational investors will move money from low-return to high-return assets, holding risk and other asset characteristics constant. Economic analysis also shows that investors decrease

⁶⁶ For the years in which the but-for rate of return was higher than the actual rate of return, individuals might also have behaved differently in the but-for world than in the actual world. For example, some individuals might have surrendered their policies in the actual world but not in the but-for world.

⁶⁷ Simple correlations, such as those produced in this litigation, do not prove there is a relationship. Such a causal interpretation is difficult to establish here with the available data. An enormous empirical literature in finance has, however, established the causal connection.

⁶⁸ Employee Plans Product Development Committee, "July 29th Meeting Minutes," ML2_NM_4552 to ML2_NM_4569 at ML2_NM_4553.

⁶⁹ See, for example, Rosen, Kenneth T. and Larry Katz, "Money Market Mutual Funds: An Experiment in Ad Hoc Deregulation: A Note," *The Journal of Finance*, Vol. 38, No. 3, Jun., 1983, pp. 1011-1017; Gibson, William E. and James L. Pierce, "Deposit Demand, 'Hot Money,' and the Viability of Thrift Institutions," *Brookings Papers on Economic Activity*, Vol. 1974, No. 3, 1974, pp. 593-636.

their contributions to pensions when the interest rate on other forms of savings increases relative to the rate of return on pension deposits.⁷⁰

2. Some annuitants' responses to differential rates of return might have led them to be uninjured

81. During the class period, the relationships between both but-for and actual returns on NM investment products, and between NM returns and those on alternative short term investments such as T-bills, were changing. Given the evidence presented above that investors respond to changes in interest rate differentials by reallocating investment towards the relatively higher returns, it is likely that at least some NM policyholders would have behaved differently in the but-for world than in the actual world. Relevant alternative investments include short to medium term Treasury bills, mutual funds, and other low risk, liquid instruments. Those annuitants who would have cashed out of their pre-MN annuities in the but-for world and earned higher short term returns on alternative investments that mimic those produced under the 1985 change would not have been injured by the 1985 change.
82. Exhibit 9 shows annual terminations of pre-MN annuities included in the putative class. There is a significant difference in the year to year termination rate. For example, in 1998, 9.9% of existing policies were terminated, whereas, in 2003, only 5.4% of existing policies were terminated. Exhibit 11 shows the relationship between the percentage of all pre-MN policies (including those not in the class) surrendered between 1976 and the first five months of 1982, and the spread between the annuity DIR and the 90-day Treasury bill rate. In years where the spread is greater, surrenders increase.
83. As an alternative to surrendering their policies, annuitants might have responded to return differentials by decreasing premium payments or increasing borrowing on their policies to take advantage of higher returns elsewhere. Any such change in annuitant behavior in the

⁷⁰ Bernheim, B. Douglas and John B. Shoven, Pension Funding and Saving, in *Pensions in the U.S. Economy*, Zvi Bodie, John B. Shoven and David A. Wise (Eds.), University of Chicago Press, 1988, pp. 85-114.

but-for world would affect the returns they earned and therefore affect the extent to which they were injured, if at all.

3. Discerning which annuitants would have behaved differently in the but-for world requires individualized inquiry

84. The degree of interest rate sensitivity of particular investors is determined in substantial part by individual characteristics. Some investors are more proactive and informed and therefore more likely to be aware of interest rate differentials than otherwise identical but uninformed investors. Some investors have professional financial advisors that are proactive in managing their portfolios, of which annuities form a part, while others may invest in an annuity as a retirement vehicle and not pay any attention to short-term variation in annuity returns relative to other investment opportunities. Additional idiosyncratic factors that affect responsiveness to return differentials include age, income, and wealth.
85. Risk-aversion varies across individuals as well. An individual more averse to risk might gladly hold a portfolio of short term assets, given the option, even at the cost of lower long-run returns. This is the essence of the risk-return tradeoff that forms the basis of much of the modern theory of finance. Risk-aversion can also be situational for a given plaintiff. An individual might be more willing to take risks, investing in longer-term assets, when he has a longer time horizon, greater wealth or health, or perhaps holds investments elsewhere in less-risky securities.
86. Deposition testimony indicates that putative class members have different risk preferences and different investment strategies. For example, policyholder Gerald Kreitzman held a portfolio of stocks, but did not know what “kind of investments” they were or what companies they were in because his brother managed his account.⁷¹ Policyholder Marleen

⁷¹ Deposition of Gerald Kreitzman, June 10, 2010, pp. 34:20-35:13 (“Q. Is the annuity the only -- whether an investment or a policy that you have that has a dividend payment attached to it? A. Well, my brother and I own some stocks, okay, but that's through Fidelity. And it's not like it's my stock, it's our stock together. We are, what, tenants in common or something like that, okay. And if I die, he gets all the stock. And if he dies, I get all the stock. And that's the only other kind of connection I have to the stock market. ...Q. Do you know what kind of investments they are? A. No. Q. Do you know what companies they're in? A. No. I know they haven't done too well.”).

LaPlant had never, during her married life, purchased stocks outside of an IRA and showed a preference for safer fixed income investments recalling that she bought “CD’s and that sort of thing.”⁷² Policyholder John Komives had a preference for riskier investments. Mr. Komives conveyed that not only did he invest in equities, but he also had been an angel investor—and lost money—in startup companies.⁷³ Policyholder Janet Reichart expressed a preference for “safer investments, nothing volatile,” after she retired and sold her stocks.⁷⁴ Each of these individuals is likely to have an idiosyncratic response to changes in returns to particular investments in their portfolios.

87. Because determining how any given individual would react to a change in interest rate differentials is essential to determining whether that individual has been injured, impact cannot be determined on a class-wide basis for holders of pre-MN annuities. In other words, proof that one individual would not have changed his behavior in this but-for world and was injured says nothing about what another plaintiff would have done and therefore cannot prove that this other plaintiff was injured.

C. For Those Potentially Injured, Estimating Damages Requires Individualized Inquiry

88. Annuitants who would have responded to higher interest rate differentials in the but-for world might have been injured depending on their alternative investment strategy. Without

⁷² Deposition of Marleen LaPlant, September 9, 2009, p. 8:6-14 (“Q. At any time during your married life have you or he purchased shares of stock, other than in an investment, in an IRA? A. No. Q. Have you made any investments of any kind, other than the retirement IRA's that you talked about before, and we'll talk about the Northwestern Mutual contract. A. We've bought like CD's and that sort of thing.”).

⁷³ Deposition of John Komives, May 18, 2010, p. 22:11-23 (“Q...Other than the investments that were from your wife, do you have any other investments that were in your name primarily? A. Well, I own some stock in a couple of these little private companies which, if they ever get sold, I might make a few dollars on them. Q. Have you been active as an angel investor with any startup company? A. Yes. Q. And have you lost money sometimes on those angel investments? A. Yes.”).

⁷⁴ Deposition of Janet Reichart, June 16, 2010, p. 11:12-24 (“Q. You mention that you have some stock investments, ...[d]o you know in 1995 what kinds of stocks you got into when you went to your new financial advisor? A. I don't remember, because I'm not in stocks anymore. Q. Do you know when you got out of stocks? A. Around the time I retired we started moving more towards safer investments for my retirement. Q. Was there any kind of investment return that you were targeting for your retirement investments? A. Not specifically. Just safer investments, nothing volatile.”).

knowledge of the risk tolerance and investment goals of the putative class members, it is not possible to identify which potentially injured class members would have behaved differently with regard to contributions, borrowing or termination of annuity contracts in the but-for world, or how their behavior might have been different. Individualized inquiry is required to determine annuitant behavior and but-for returns.

89. Some annuitants might have behaved differently in the but-for than in the actual world because the timing of their retirement or their willingness to borrow from their annuity policy depends on their level of accumulated savings. To the extent that the accumulated savings differ between the actual and but-for worlds, behavior might also differ. Investment goals might differ across individuals. Some might be targeting a particular level of savings that will allow them to retire, while others might retire at a given age regardless of accumulated savings.
90. Estimating damages for those putative class members whose behavior would have been different in the but-for than in the actual world requires determining how they would have changed their premium payments, borrowing and timing of termination and identifying what alternative investments were likely to have been undertaken. These individuals would have received different investment returns than they did in the actual world.

VI. ANALYSIS OF HOYER REPORT

A. Mr. Hoyer's Assignment Does Not Address Common Impact or Damages

91. Plaintiffs' expert Robert Hoyer was asked by attorneys for the Plaintiffs:

To describe a reasonable methodology that would provide the basis for prospective relief for current Pre-MN annuity policyholders; To indicate whether the methodology could be applied to all Pre-MN annuity policyholders on a common basis using a mechanical calculation; and To determine if the same methodology can be applied to determine the 'Difference' as defined (see below) to annuitants with policies no longer in-force resulting from the 1985 Change.⁷⁵

92. Mr. Hoyer defines "prospective relief" as including two steps. The first step "involves [NM] crediting to Pre-MN annuity policyholders' accounts the additional amount that would have

⁷⁵ Hoyer Report, ¶ 6.

accumulated ‘But-For’ the 1985 Change (the ‘Difference’).”⁷⁶ The second step requires NM to “credit dividends thereafter on the revised cash values using a dividend interest rate (‘DIR’) that reflects the company’s aggregate investment income dividend factor rather than the investment income factor associated with the segmented account of current rate investments.”⁷⁷

93. Given this assignment, the Hoyer Report does not directly address the issue of class-wide common impact. In fact, as I explain below, Mr. Hoyer’s deposition testimony *supports* my opinion that not all members of the putative class were injured, i.e., that impact is not common. Nor does the Hoyer Report provide a methodology for proving impact or calculating damages on a class-wide basis. Instead, Mr. Hoyer produces a set of tables showing the difference in the rate of accumulation of net deposits by year of deposit and withdrawal, assuming that but for the 1985 change NM would have set the DIR on pre-MN annuities equal to the DIR on life policies and that all putative members either did or did not have direct recognition during the entire class period. As I explain below, the calculation of this “difference” falls far short of a complete damages methodology. It also ignores relevant annuity characteristics, rendering Mr. Hoyer’s analysis inadequate as a basis for computing damages.
94. Mr. Hoyer proposes to calculate the “DIR but-for the 1985 change.”⁷⁸ In doing so, he does not consider that there were many different ways in which NM could have behaved absent the 1985 change. In addition, Mr. Hoyer does not attempt to calculate the but-for return to annuitants, taking into account economically plausible differences in annuitant behavior that would have affected that return in the but-for world. Instead, he implicitly asserts that each individual annuitant would have done the same thing (i.e., nothing) had they been made aware of the change.

⁷⁶ Hoyer Report, ¶7.

⁷⁷ Hoyer Report, ¶7.

⁷⁸ Hoyer Report, p. 5.

B. The Hoyer Report Does Not Establish Common Economic Impact Among Putative Class Members

95. In his deposition in this matter, Mr. Hoyer at one point stated his belief that “every member in this class was harmed the moment the change in ’85 was made.”⁷⁹ He does not offer any, much less a plausible, definition of what he means by “harm” here. He *asserts* that plaintiffs were injured, rather than provide evidence of economic injury and argument as to the commonality of such evidence across the entire class.⁸⁰

96. At another point in his deposition, however, Mr. Hoyer confirmed that some class members were not *financially* harmed by the 1985 change:

Q And I just want to be clear: In the group of [putative] class members, were there some who surrendered their policies at a particular time such that those individuals were not financially harmed by the 1985 change?

A That is correct.⁸¹

97. Mr. Hoyer’s own “difference” calculation indicates that almost a third of the putative class might not have been financially injured. As shown in Exhibit 9, and described in Section V. A above, nearly 30 percent of the at-issue annuities were terminated in 1985 or any year from 1988 to 1993 and are likely to have earned a higher or equal return on their annuity policies in the actual world than in Mr. Hoyer’s but-for world.

98. Moreover, Mr. Hoyer’s assumption that absent the 1985 change the pre-MN annuities would have earned a rate of return equal to typical NM life insurance policies might not be correct. If, as was the case in some years prior to the 1985 change, annuities had a lower DIR than life insurance policies, then the number of uninjured putative class members would be even

⁷⁹ Deposition of Robert L. Hoyer, May 17, 2013, p. 146: 8-10.

⁸⁰ Mr. Hoyer admits in deposition that he did not attempt to quantify nonfinancial harm to plaintiffs nor was he qualified to do so. See Deposition of Robert L. Hoyer, May 17, 2013, p. 161:12-22 (“Q. ...Well, have you quantified the harm that was done to them that was other than financial, sir? A. No, that's not a quantifiable value for an actuary to do. Q. Was that something that you were asked to perform as part of your analysis in coming to your opinions in the March 4th, 2013 report? A. I was neither asked to do that nor did I do it. Q. And that would not be something that you would feel you had expertise to quantify; correct? A. I would not attempt to quantify that number, no.”).

⁸¹ Deposition of Robert L. Hoyer, May 17, 2013, p. 158:12-20.

larger. In addition, had the 1985 change not taken place, NM might have increased the expenses allocated to pre-MN annuities, further lowering the pre-MN DIR relative to life insurance DIRs.⁸²

C. A Common Methodology for Estimating Class-wide Damages Cannot Be Derived from the Hoyer Report

99. Regardless of what return pre-MN annuities would have earned in the absence of the 1985 change, the calculations presented in the Hoyer Report do not provide the basis for a common methodology for estimating class-wide damages.

1. The Hoyer Report does not account for differences in annuitant behavior between the actual and but-for worlds

100. As I describe above, some annuitants will respond to changing economic and personal circumstances by modifying their borrowing behavior, their deposit behavior, and/or their withdrawal (or termination of contract) behavior. They will do so in ways that vary depending on personal preferences and circumstances. Mr. Hoyer acknowledged these facts in his deposition, stating that “if the change had not been made, policyholders would have behaved in a different manner”⁸³ and, had NM never made the 1985 change “[i]t’s possible that policyholders would do anything; and in a different scenario policyholders might do different things. Certainly that is a consideration, but I haven’t spent much time analyzing it.”⁸⁴
101. The “difference” calculation presented in the Hoyer Report assumes that annuitant behavior would have been the same in all relevant respects but for implementation of the 1985 change.

⁸² Affidavit of Chris G. Trost, *Beverly E. Krueger, on behalf of themselves and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, Case No. 1:10-CV-00128-SPM, April 15, 2011, ¶4 (“...if Northwestern Mutual had decided not to use segmentation, or if Northwestern Mutual were prohibited by the court from using segmentation, the Company would have assessed expense, disintermediation and dilution charges on the annuity dividend interest rates, which would have led to different final rates than the rates paid on life insurance products.”).

⁸³ Deposition of Robert L. Hoyer, May 17, 2013, p. 64:5-7.

⁸⁴ Deposition of Robert L. Hoyer, May 17, 2013, p. 91:13-16.

This “difference” calculation therefore cannot form the basis for a damages quantification because it does not “isolate the effect of the violation on the plaintiff from the effect of all other events.”⁸⁵ Hoyer rejects the need to construct a but-for world that takes into account that annuitants might have behaved differently in the actual than in the but-for world. He states his rationale in his deposition:

Policyholders did not exist in the ‘but-for’ world. The ‘but-for’ world is a theoretical concept used to define a current difference. So it’s – I have no idea, and it’s irrelevant to my conclusions, any action they might have taken in such world. They did not live in that world.⁸⁶

102. Careful construction of a but-for world is an essential part of damages calculations. It requires making economically plausible assumptions about a state of the world that did not occur. Calculation of damages in the present matter must consider differences in the behavior of putative class members with regard to their policies absent the 1985 change.

2. The Hoyer Report does not take into account all relevant characteristics of the at-issue policies

103. Even assuming damages should be calculated holding annuitant behavior constant, the analysis in the Hoyer Report does not provide a viable method for estimating damages because it fails to take into account all relevant characteristics of the at-issue policies.
104. In his deposition, Mr. Hoyer testified that his calculation of the “difference to date” is “a part of what [he] would consider damages.”⁸⁷ He further confirmed that the analysis in his report

⁸⁵ ABA Section of Antitrust Law, *Proving Antitrust Damages, Legal and Economic Issues*, 2nd Edition, American Bar Association, 2010, p. 53.

⁸⁶ Deposition of Robert Hoyer, May 17, 2013, p. 51:12-17.

⁸⁷ Deposition of Robert L. Hoyer, May 17, 2013, p. 19:13-18 (“Prospective relief as I have analyzed it and as I discussed with counsel, in my opinion, takes two forms: A difference to date for those individuals that are remaining in force and fair and equitable treatment of those individuals prospectively from point of that adjustment.”) and pp. 20:18-21:3 (Q. It would be based on things that happened in the past and there would be money provided by Northwestern Mutual to an account based on things that happened in the past? A. It would be current adjustment based on historical activity, yes, sir. Q. Is that damages? A. In my dictionary term, it's certainly a part of what I would consider damages. You have brought up that term as a legal term. I have no opinion as to how that fits your legal definition.”).

did not take into account any of those other parts of damages.⁸⁸ For individuals that terminated their at-issue annuities prior to the present, Mr. Hoyer appeared to suggest in his deposition that economic damages could be calculated by applying interest to the “difference” calculated using the method laid out in his report.⁸⁹ He stated that the methodology in his report quantifies how much in additional funds an annuitant should have received in the year the policy was terminated and an “interest differential” could be applied to account for the damages being paid in the present.⁹⁰

105. This suggested approach fails to correctly calculate damages because the methodology outlined in the Hoyer Report does not quantify how much in additional funds an annuitant would have received but for the 1985 change (for a given series of annual but-for pre-MN annuity DIRs). There are several reasons why this is so.
106. First, the cash value of the account at termination depends on how the annuitant elected to receive his dividend payments. For example, if an annuitant received dividend payments as cash, then the cash value of the annuity is unaffected by the DIR. Estimating damages for such an annuitant requires a determination of how to compensate him for annual differences in his cash dividend payments, taking into account that in some years his dividend payments might have been higher in the but-for than the actual world and in some years they might have been lower. Mr. Hoyer’s methodology, using only the cash value of the annuity at termination, would not calculate damages correctly for this annuitant. More generally, Mr.

⁸⁸ Deposition of Robert L. Hoyer, May 17, 2013, p. 40:16-19 (“Q. But other than the accumulated difference, you did not actually in your report take into account any of those other parts of damage? A. That is correct, sir.”).

⁸⁹ Mr. Hoyer indicates that damages might also include punitive damages. See Deposition of Robert L. Hoyer, May 17, 2013, p. 40:3-7 (“A. I’m not an attorney, but I have been involved in litigation situations certainly, and there may or may not be punitive damages or costs. There is – you know, it gets to be a determination made by the courts, not by my analysis.”).

⁹⁰ Deposition of Robert L. Hoyer, May 17, 2013, p. 38:5-17 (“Q. What other part of damages would there be for the individuals who have surrendered or terminated their policy? A. Well, I could use as an example, if an individual policyholder terminated in 2005, what I have quantified and what this methodology quantifies is how much additional funds they should have received in 2005, but in fact they did not receive any additional funds, so clearly this difference is applicable to 2005. The Court may decide, someone else may decide, that since it was not paid in 2005, if it is paid in 2013, there is an interest differential, that’s beyond the scope of my report.”).

Hoyer's methodology works only for those policies whose dividends were applied entirely to increase cash value.

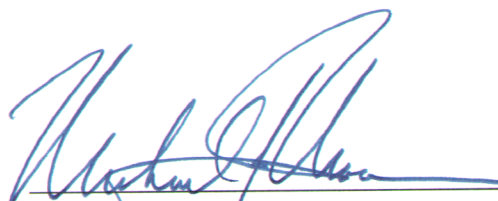
107. Second, not all annuitants choose to receive a single cash payment when their policy is terminated. If the policy is terminated because of maturity, the annuitant has many payout options. For example, as shown in Exhibit 5, the annuitant may select a single life income plan. Under such a plan, payments are made until the death of the annuitant. The size of the periodic payments made to an annuitant that selects a single life income plan depends on the cash value of his policy at maturity. But the total payments he receives from his policy depend on how long he lives. The damage, if any, incurred by such an annuitant is therefore not simply the difference in the cash value of his policy at maturity. Rather, a damages calculation must take into account how many payments the annuitant received and whether he is still receiving payments.
108. Third, Mr. Hoyer assumes that all putative class members who accepted Update '83 did so before the class period.⁹¹ This assumption is incorrect, yet Mr. Hoyer implies that because the effect on overall damages is small the effect of this assumption is "immaterial."⁹² Mr. Hoyer does not offer a calculation of the impact of this assumption. Instead, his method assumes the result. In addition, his approach could result in the improper calculation of the damages of those class members who accepted Update '83 during the class period. Specifically, because an annuitant's status regarding Update '83 factors into the determination of his DIR, policies that accepted Update '83 during the class period cannot be categorized into one of the four tables Mr. Hoyer uses to display his "differences"

⁹¹ In deposition, Mr. Hoyer contradicts himself in his description of how he accounts for Update '83. He states that he does not have a separate formula for individuals who accepted Update '83 during the class period, implying that all putative class members who accepted the amendment were considered to have had Direct Recognition throughout the class period (see Deposition of Robert L. Hoyer, May 17, 2013, pp. 133:15 - 134:15).

⁹² Deposition of Robert L. Hoyer, May 17, 2013, p. 134:6-15 ("The opinion of treatment of those who have accepted Update '83 or direct recognition and those who did not, I think within this formula, without trying to nitpick the formula for a few individuals for a couple of years, it's immaterial and hence the opinions that I made or the assumptions, however you want to categorize them, I think accurately and fairly reflect all individuals, not -- you know, including a couple who may have changed it during a certain period of time.").

calculations. Using Mr. Hoyer's approach, these policies would each have unique tables for calculating the "difference" based on when Update '83 was accepted. As shown in Exhibit 12, there are over a hundred at-issue annuities for which Update '83 was accepted during or after 1985.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 28, 2013, in Charlottesville, Virginia.



Michael J. Moore

APPENDIX A
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EMPLOYMENT & AFFILIATIONS

ACADEMIC

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Jackson Institute of Global Affairs: Senior Lecturer
School of Public Health: Senior Lecturer
School of Management: Senior Lecturer

University of Virginia:

Batten School of Leadership and Public Policy: Professor of Public Policy, 2011-2012;
Visiting Professor, 2008-2011

Department of Economics, 2006-2008

Darden Graduate School of Business: Visiting Professor, 2011-present; Batten Fellow, 2009-present; Bank of America Research Professor, 2003-2005; Professor, 2001-2002; Visiting Associate Professor, 2000-2001

Medical Center: Professor of Health Evaluation Sciences, 2001-2003

Law School 2005

National Bureau of Economic Research:

Health Economics Program, Health Policy Program: Research Associate, 1996-2008

University of Chicago:

Graduate School of Business: Adjunct Professor of Economics, 2007

Stigler Center for the Study of Economy and the State: Olin Fellow, 1999-2000

University of Georgia:

Terry College of Business: Visiting Professor, 2007-present

UC-Santa Barbara:

Bren School of the Environment: Visiting Professor, 1999-2006

Duke University:

Fuqua School of Business: Associate Professor (with tenure), 1992-2001; Associate Professor (without tenure), 1990-1992; Assistant Professor, 1986-1989; Visiting Assistant Professor, 1984-1985

Terry Sanford Institute of Public Policy, various years; Center for Aging, 1994-2001

INSEAD:

Visiting Professor, 1995-1996

University of Michigan:

Graduate School of Business: Instructor of Economics, 1981-1984

NON-ACADEMIC

Chicago Partners (Navigant Consulting): Academic Affiliate, 2011-2012; Principal, 2006-2011

Huron Consulting Group: Managing Director, 2003-2006

EDUCATION

Ph.D. University of Michigan, Department of Economics, 1984, M.A., 1982

M.B.A. Babson College, 1978

B.S. Boston College, 1975

AWARDS AND HONORS

Kenneth Arrow Award for best paper in Health Economics, Medical Care Section, American Public Health Association, for “Drinking and Schooling,” 1993

Kulp-Wright Prize for Outstanding Book in Risk and Insurance, American Society of Risk and Insurance, *Compensation Mechanisms for Job Risks*, 1990

Best Published Article published in *Economic Inquiry*, “The Quantity Adjusted Value of Life,” 1988

RESEARCH GRANTS AND OTHER CONTRACTS

Center for the Study of Aging and Human Development, Duke University Medical Center, Senior Fellow 1994-2001

University Research Council, Duke University, 1986, 1987

National Science Foundation: Program in Decision, Risk, and Management Science, co-principal investigator, Product Liability Project 1989-1991

National Science Foundation: Program in Decision Risk and Management Science, co-principal investigator, Consumer Product Safety Project, 1990-1991

National Institute on Alcohol Abuse and Alcoholism: Youthful Drinking Project, 1992-1994

National Institute for Child Health and Development: Shannon Award, 1994-1995

National Institute for Child Health and Development: Pregnancy Outcomes Project, 1996-1998

U.S. Veteran’s Administration: “Informal Caregivers of Veterans with Dementia: Costs, Quality of Life, and Service Use.” 1997-2003

National Institute for Child Health and Development: Long Term Consequences of Abortion Funding Cutoffs, 1999-2001

PROFESSIONAL ACTIVITIES

Editorial Advisory Board, *Journal of Risk and Uncertainty*

American Economic Association, Econometric Society, Industrial Relations Research Association

Duke University: Faculty Compensation Committee, 1994-1996; Alcohol Policy Task Force, 1995; Sport Agents Committee, 1991-2001. Fuqua School of Business: Economics Area Coordinator, 1994-1998; Curriculum Committee, Admissions Director Search Committee, Health Care Management Committee; LEAD Program in Business, Curriculum Director 1993-1996

Ad Hoc Reviewer, *Journal of Political Economy*, *American Economic Review*, *Quarterly Journal of Economics*, *RAND Journal of Economics*, *Review of Economic Studies*, *Journal of Law and Economics*, *Review of Economics and Statistics*, *Journal of Risk and Uncertainty*, *Journal of Health Economics*, *Journal of Environmental Economics and Management*, *Journal of Human Resources*, *Journal of Public Economics*, *Economic Inquiry*, *Journal of Labor Economics*, *Industrial and Labor Relations Review*, *Economic Inquiry*

Dissertation Committees: Lindsey Boiney (Fuqua School of Business), Jens Ludwig (Duke Economics), David Anderson (Duke Economics), Rosalie Pacula (Duke Economics), Natalie Webb (Duke Economics), Geoff Gee (Duke Economics), Ruskin Morgan (Fuqua School of Business), Robert Scharff (Duke Economics), Wei Zhu (Duke Economics)

RESEARCH PUBLICATIONS/JOURNAL ARTICLES

“Workers’ Compensation: Wage Effects, Benefit Inadequacies, and the Value of Health Losses,” with W. Kip Viscusi, *The Review of Economics and Statistics*, Vol. 69, No. 2 (1987), pp. 249-261.

“The Quantity Adjusted Value of Life,” with W. Kip Viscusi, *Economics Inquiry*, Vol. 26, No. 3 (1988), pp. 369-388. Awarded best paper prize for 1988 volume of *Economic Inquiry*.

“Doubling the Estimated Value of Life: Results Using New Occupational Fatality Data,” with W. Kip Viscusi, *Journal of Policy Analysis and Management*, Vol. 7, No. 3 (1988), pp. 476-490.

“Adaptive Learning. Adaptive Utility, and Rational Behavior in a Repeated Prisoner’s Dilemma,” with Marian C. Moore (1989), *The Journal of Risk and Uncertainty*, Vol. 2, No. 4 (1989), pp. 499-515.

“Rates of Time Preference and Valuations of the Duration of Life,” with W. Kip Viscusi, *Journal of Public Economics*, no. 38 (1989), pp. 297-317.

“Promoting Safety Through Workers’ Compensation: The Efficacy and Net Wages Costs of Injury Insurance,” with W. Kip Viscusi, *The RAND Journal of Economics*, Vol. 20, No. 4 (1989), pp. 499-515.

“Discounting Environmental Health Risks: New Evidence and Policy Implications,” with W. Kip Viscusi, *Journal of Environmental Economics and Management*, No. 18 (1989), pp. S51-S62.

“Models for Estimating Discount Rates for Long-term Health Risks Using Labor Market Data,” with W. Kip Viscusi, *Journal of Risk and Uncertainty*, Vol. 3 (1990), pp. 381-401.

“Pioneering and Market Share: Is Entry Time Endogenous and Does It Matter?” with William Boulding and Ronald Goodstein, *Journal of Marketing Research*, Vol. 28 (1991), pp. 97-104.

“Worker Learning and Compensating Differentials,” with W. Kip Viscusi, *Industrial and Labor Relations Review*, Vol. 45, no. 1 (1991), pp. 80-96.

“Product Liability, Research and Development, and Innovation,” with W. Kip Viscusi, *Journal of Political Economy*, Vol. 101, no. 1 (1993), pp. 161-184.

“Drinking and Schooling,” with Philip Cook, *Journal of Health Economics*, Vol. 12 (1994), pp. 411-429. Awarded Kenneth Arrow Award, best paper in health economics (1994).

“This Tax is for You: The Case for a Higher Beer Tax,” with Philip Cook, *National Tax Journal*, 47 (3), (1994), pp. 559-573.

“A Statistical Profile of Product Liability in the Pharmaceutical Industry,” with W. Kip Viscusi and James Albright, *Seton Hall Law Review*, 24 (3), (1994), pp. 1418-1436.

“Habit Formation, Interdependent Preferences, and Individual Consumption: Evidence from Panel Data,” with Narayan Naik, *Review of Economics and Statistics*, vol. 88 (1996), pp. 321-328.

“Unions, Employment Risks, and Market Provision of Employment Risk Differentials,” *Journal of Risk and Uncertainty*, 10 (1), 1995, pp. 57-70.

“The Learning Curve for Laparoscopic Cholecystectomy,” with W. Meyers and C. Bennett, *American Journal of Surgery*, 1995.

“Consumer Product Safety Regulation in the U.S. and U.K.: The Case of Bicycles,” with Wes Magat, *RAND Journal of Economics*, Spring, 1996, pp. 148-164.

“The content and properties of the Caregiver Activities Time Survey (CATS): An outcome measure for use in clinical trial research on Alzheimer's disease,” with Elizabeth C. Clipp and Linda K. George, *American Journal of Alzheimer's Disease and Other Dementias*, vol. 1 no. 6, 1996, pp. 3-9.

“The Impact of Velnacrine Maleate on Time Use among Caregivers of Patients with Alzheimer's Disease,” with Elizabeth Clipp, *Clinical Pharmacology*, 1996.

“Death and Tobacco Taxes,” *RAND Journal of Economics*, Summer 1996, pp. 415-428.

“An Outcome Measure for Use in Clinical Trials Research on Alzheimer's Disease,” with Elizabeth Clipp and Linda George, *American Journal of Alzheimer's Disease*, 1996.

“Labeling and Performance Standards for Product Safety: The Case of CPSC's Lawn Mower Standards,” with Wes Magat, *Managerial and Decision Economics*, 1997.

“The Injury Risk Consequences of the All-Terrain Vehicles Consent Decrees,” with Wes Magat, *International Review of Law and Economics*, 1997, pp. 241-257.

“The Anatomy of Jumps and Falls in Wages,” with W. Kip Viscusi and Richard J. Zeckhauser, *Research in Labor Economics*, Vol. 17, 1998.

“Changes in Abortion Funding and Pregnancy Outcomes,” with Alan Parnell, Phil Cook, and Deanna Pagnini, *Journal of Health Economics*, 18 (1999), pp. 241-257.

“Only the Illusion of Possible Collusion? Cheap Talk and Similar Goals: Some Experimental Evidence,” with Marian C. Moore and Ruskin Morgan, *Journal of Public Policy and Marketing, Competition Policy and Antitrust Law*, (2001) 20(1), pp. 27-37.

“Passive Smoking: Health Perceptions Myth vs. Health Care Reality,” with Carolyn Zhu, *Journal of Risk and Uncertainty* 2000, 21 (2), pp. 283-310.

“Informal Costs of Dementia Care: Estimates from the National Longitudinal Caregiver Study,” with Elizabeth Clipp and Carolyn Zhu, *Journal of Gerontology: Social Sciences*, 56B, S219-S228, 2001.

“Dementia Problem Behaviors and the Production of Informal Caregiving Services,” with Elizabeth Clipp and Carolyn Zhu, *Review of Economics of the Household*, vol. 1, no. 1.

BOOKS

Compensation Mechanisms for Job Risks: Wages, Worker’ Compensation, and Product Liability, with W. Kip Viscusi, (Princeton University Press, 1990). Awarded Kulp-Wright Prize for Outstanding Book in Risk and Insurance, 1990.

Safety Rules: 25 Years of Consumer Product Safety Regulation in the U.S. and the U.K., with W. Magat (Kluwer Academic Publishers, unpublished manuscript).

The Profit Impact of Marketing Strategy Project: Retrospect and Prospects, Farris, Paul W., and Michael J. Moore, eds. Cambridge, Cambridge University Press, 2004.

BOOK CHAPTERS, CONFERENCES PROCEEDINGS, AND BOOK REVIEWS

“Michigan State Expenditures and the Provision of Public Services,” John Cross with Cathy Jensen, Michael Moore and Janet Wolfe, in Brazer, Harvey E., (ed.), *Michigan’s Fiscal and Economic Structure*, University of Michigan Press, Ann Arbor, Michigan, (1981).

“Social Insurance in Markets Contexts: Implications of the Structure of Workers’ Compensation for Job Safety and Wages,” with W. Kip Viscusi, in *Contributions to Insurance Economics*, G. Dionne, ed (Norwell, MA: Kluwer Academic Publishers, 1989), pp. 399-424.

“Have Increases in Workers’ Compensation Benefits Paid for Themselves?” with W. Kip Viscusi, in *Benefits, Costs, and Cycles in Workers’ Compensation Insurance*, P. Borba and D. Appel, eds., (Norwell, Ma: Kluwer Academic Publishers, 1990), pp. 1-22.

“Cooperation, Hierarchy, and Structure,” with Marian Chapman Moore, in *Research on Negotiation in Organizations*, Vol. 2, Roy J. Lewicki, et al., ed., (JAI Press, 1990), pp. 207-217.

“Rationalizing the Relationship between Product Liability and Innovation,” with W. Kip Viscusi, *Tort Law and the Public Interest*, P. Schuck, ed., (W.W. Norton Publishers, 1991), pp. 105-127.

“An Industrial Profile of the Links between Product Liability and Innovation,” with W. Kip Viscusi, in Litan, R. and P. Huber, *The Liability Maze*, (Washington, D.C.: Brookings Institution, 1991), pp. 81-119.

“Accident Records as a Screening Device: An Appraisal,” in *The Human Resources Professional*, Vol. 3, no. 3 (1991), pp. 13-15.

“Violence Reduction Through Restrictions on Alcohol Availability,” with Phil Cook, in *Alcohol, Health, and Research World*, Vol. 17, no. 2 (1993), pp. 151-156.

“Taxation of Alcoholic Beverages,” with Phil Cook, in Hilton, Michael, and Greg Bloss, *Economics and the Prevention of Alcohol-Related Problems*, U.S. Department of Health and Human Services, (1993), pp. 33-58.

“Economic Perspectives on Alcohol Related Violence,” with Phil Cook, in S. Martin, ed., *Alcohol and Interpersonal Violence*, Research Monograph No. 24, National Institute of Alcohol Abuse and Alcoholism, (1994), pp. 193-212.

“Nonprice Competition, Cost Shocks, and Profits in the Airline Industry,” with Messod D. Beneish in B. Starr McMullen, ed., *Research in Transportation Economics*, Vol. 3 (1994), pp. 67-94.

Review of *A Measure of Malpractice: Medical Injury, Malpractice Litigation, and Patient Compensation*, Weiler, Paul C., et. al., *Journal of Economic Literature*.

Review of *Simulating Workplace Safety*, Kneisner, T. And J. Leeth, Kluwer Academic Press, forthcoming in *Journal of Economic Literature*.

“Insurance for Workplace Injuries,” in *New Palgrave Dictionary of Law and Economics*, P. Newman, ed.

“Discontinuous Wage Changes and Job Events,” with Kip Viscusi and Richard Zeckhauser, in *Research in Labor Markets*, S. Polachek, ed., vol. 17, (1998).

“Alcohol,” with Philip Cook in Newhouse, J., and A. Cuyler, eds., *Handbook of Health Economics*, Amsterdam: North-Holland, 2000.

“Environment and Persistence in the Youthful Demand for Alcohol,” with Philip Cook, in Gruber, J., ed., *Risky Behavior Among Youths*, University of Chicago Press/NBER, 2001.

“The Health Care Consequences of Smoking and its Regulation,” with James Hughes, in Garber, A., ed., *Frontiers of Health Policy*, vol. 4. NBER.

“The Economics of Alcohol Abuse and Alcohol Control Policies,” with Philip Cook, *Health Affairs*, (2002).

“Informal Costs of Dementia,” with E. C. Clipp and Carolyn Zhu, In *Research and Practice in Alzheimer’s Disease and Other Dementias (special Issue on Caregiving)*, B. Vellas, Editor-in-Chief, European Alzheimer’s Disease Consortium (EADC), 2002.

“Product Liability Entering the 21st Century,” with W. Kip Viscusi (AEI-Brookings Joint Center for Regulatory Studies, 2001).

“Cargo Cult Econometrics: Specification Testing in Simultaneous Equation Marketing Models,” with Russ Morgan and Judith Roberts, in Farris, Paul, and Michael Moore, eds., *The Profit Impact of Marketing Strategy Project: Retrospect and Prospects*, Cambridge, Cambridge University Press, 2004.

OTHER PUBLICATIONS

“Effect of Mentane (velnacrine maleate) on Alzheimer Caregiver Time Allocation: A

Multicenter, Double-blind Comparison with Placebo,” with Elizabeth C. Clipp. On file Hoechst-Roussel Pharmaceuticals Neurosciences Strategic Marketing, (1993).

“Consumer Product Safety Regulation: Lessons from International Data,” with Wesley Magat. Final Report to National Science Foundation, Decision, Risk and Management Science program, Project No. 8922249, (1994).

“Alzheimer’s Disease and Caregiver Time,” with Elizabeth C. Clipp. Letter to the Editor, *The Lancet*, (1994).

“Impact of Therapy on Caregiving Time and Costs in Alzheimer’s Disease,” with Elizabeth C. Clipp. *Progress in Alzheimer’s Disease*, 1994, in press.

“Block the threats to Workers’ Compensation,” op-ed article, *Wall Street Journal*.

WORKING PAPERS

“Applied Econometrics: a STATA Companion,” with Greg Talbert and Jim Albright, Working Paper.

“Addiction and Schooling,” draft.

“Drinking by Young Adults, Part I: Demographics,” with Philip Cook and Rosalie Pacula. Center for the Study of Business, Regulation, and Economic Policy Working Paper, No. 93-15.

“The Efficacy of Voluntary Safety Standards: Lessons from the Chain Saw Industry,” with Wesley Magat.

“Habit and Heterogeneity in the Youthful Demand for Alcohol,” with Philip Cook. Center for the Study of Business, Regulation, and Economic Policy Working Paper, No. 94-3.

“The Political Economy of Workplace Smoking,” Working Paper.

“Napsterizing Pharmaceuticals: Access, Innovation, and Welfare,” with Edward Snyder and James Hughes. (Previous version: NBER Working Paper No. 7769).

“The Sealy Litigation and Its Aftermath,” with Edward Snyder. Draft.

WORK IN PROGRESS

U.S. v. Sealy and its Aftermath (with Edward Snyder)

Pharmaceutical Regulation and Antitrust

Antitrust Law and Econometrics

APPENDIX B

LAST 5 YEARS OF EXPERT TESTIMONY FOR MICHAEL J. MOORE

TESTIFYING EXPERT

1. **In re TFT-LCD (Flat Panel) Price Fixing Litigation. United States District Court, Northern District of California, San Francisco Division. Master File No. 07-m-1827 SI.**

Target Corp., et al., v. AU Optronics Corp., et al. Case No. 10-cv-4945 SI

Motorola Mobility, Inc., v. AU Optronics Corp., et al. Case No. 09-cv-5840 SI

AT&T Mobility, LLC, v. AU Optronics Corp., et al. Case No. 09-cv-4997 SI

Electrograph Systems Inc.; Electrograph Technologies Corp., v. Epson Imaging Devices Corp., et al. Case No. 10-cv-00117 SI

Antitrust Price Fixing, Liability. Declaration and deposition
Contact: Nick Verwolf, Davis Wright & Tremaine, Seattle WA

2. **Ehret v. USA. United States District Court, Northern District of Indiana.**

Takings Damages. Declaration and Trial Testimony
Contact: Mark Christensen, Christensen & Ehret, Chicago IL

3. **William Roberts v. The Scott Fetzer Company. Civil action No. 4:07-CV-00080-CDL. United States District Court, Middle District of Georgia, Columbus Division.**

Consumer Fraud, Class Certification. Declaration and deposition
Contact: Lee Garrett, Jones Day, Atlanta GA

4. **Emerson Electric Co., et al., v. Le Carbone Lorraine, S.A., et al., United States District Court for the District of New Jersey, No. 05-cv-06042.**

Antitrust Price Fixing Damages (settled)
Contact: Jonathan Feld, Katten Muchen, Chicago, IL

5. **Chivers, et al., v. State Farm, et al.**

Insurance Fraud, Class Certification, Declaration
Contact: Tom Rodgers, Stacy Allen. Jackson Walker, Austin TX

6. **Burgess v. Farmers Insurance Company, Inc., and Farmers Insurance Exchange. U.S. District Court of Comanche County, State of Oklahoma, CJ-2001-292.**

Insurance Fraud, Damages, Deposition
Contact: Tom Rodgers, William Cobb. Jackson Walker, Austin TX

7. **Grays Harbor Adventist Christian School, Greg G. Bogdanoavich, and Mary LaForest v. Carrier Corporation, U.S. District Court, Western District of Washington No. CV05-5437-RBL.**

Class Action Damages – Consumer Fraud
Affidavit and deposition
Contact: Brian Swanson - Bartlit-Beck, Chicago IL

8. **Jeff Dougherty, Frank Zinn, and Harvey Opaleski v. Carrier Corporation, U.S. District Court, Eastern District of Michigan, No. 2:06-cv-15659.**

Consumer Fraud, Class Certification
Declaration and deposition
Contact: Brian Swanson - Bartlit-Beck, Chicago IL

9. **Mark Neuser, Arlan and Marcia Hinkelman, vs. Carrier Corporation, U.S. District Court, Western District of Wisconsin, No. 06-C-645-S.**

Class Certification – Consumer Fraud
Declaration and deposition
Contact: Brian Swanson - Bartlit-Beck, Chicago IL

10. **Costco v. Hoen, et al. U.S. District Court, Western District of Washington at Seattle, No. CV04-0360.**

Challenges to state restrictions on alcohol distribution (21st Amendment)
Affidavit, deposition, and trial testimony
Contact: Michael Sandler - Sandler Ahern & McConaughy, Seattle WA
David Burman - Perkins Coie, Seattle WA

11. In Re Ocean Tankers Price Fixing Litigation.

Antitrust price fixing damages
Class action Opt-outs
Retained, case settled
Contact: Andrew Klevorn - Eimer, Stahl, Klevorn, and Solberg,
Chicago, IL

CONSULTING EXPERT

12. In re eBay Sellers Antitrust Litigation. U.S. District Court, N.D. Cal., San Jose Division, Case No. C 07-01882 JF (RS).

Monopolization, Class Certification
Contact: Tom Brown, O'Melveny and Myers, San Francisco CA

13. Sun Microsystems, Inc., et al., v. Hynix Semiconductor, Inc., et al., U.S. District Court, N.D. Cal., No. C-06-01665 PJH (Consolidated).

Antitrust Price Fixing
Injury and Damages
Contact: Ian Simmons, Tom Brown – O'Melveny and Myers,
Washington DC

14. Anderson Contracting, Inc., v. Bayer AG, et al., (EPDM Antitrust Litigation), Iowa District Court, Polk County IA, Case No. CL 95959.

Antitrust Price Fixing
Indirect purchaser class certification
Contact: Ian Simmons - O'Melveny & Myers, Washington DC

15. Brock v. Honeywell International, U.S. District Court, N.D. Cal., No. C-04-5328 WHA.

Attempt to monopolize
Indirect purchaser class certification
Contact: Ian Simmons - O'Melveny & Myers, Washington DC

16. MacKinnon v. Honeywell International, Maine.

Attempt to monopolize
Indirect purchaser class certification
Supporting testifying expert
Contact: Ian Simmons - O'Melveny & Myers, Washington DC

17. Wright, et al., v. Honeywell, State of Vermont, Orange County Superior Court, Docket No. 301-11-04.

Attempt to monopolize
Indirect purchaser class certification
Supporting testifying expert
Contact: Ian Simmons - O'Melveny & Myers, Washington DC

18. In Re Ethylene Propylene Diene Monomer (EPDM) Antitrust Litigation, No. 3:03-MD1542 (PCD).

Antitrust Price Fixing
Direct Purchaser Class Certification
Contact: Ian Simmons - O'Melveny and Myers, Washington DC

APPENDIX C

DOCUMENTS CONSIDERED

Legal Filings

Marleen M. LaPlant v. The Northwestern Mutual Life Insurance Company

Complaint and Jury Demand, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, Code: 30701, August 26, 2008

Decision and Order on Motion of Plaintiff for Class Certification, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, Code: 30701, October 26, 2009

Notice of Class Action, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, Code: 30701, December 14, 2009

Decision in Matter Tried to the Court, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, Code: 30701, March 7, 2011

Plaintiff's Amended Notice and Motion to Redefine the Class to Include All Pre-MN Annuitants and for Related Relief, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, Code: 30701, September 12, 2011

Plaintiff's Brief in Support of Motion for an Order Redefining the Class and for Related Relief, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, United States District Court, Eastern District of Wisconsin, Case No. 2:11-CV-00910, March 4, 2013

Appendix Exhibit 39 to Plaintiff's Brief in Support of Motion for an Order Redefining the Class and for Related Relief, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, United States District Court, Eastern District of Wisconsin, Case No. 2:11-CV-00910, March 4, 2013

Expert Report of Theodore E. Affleck, Submitted for *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, June 30, 2010

Expert Report of S. Travis Pritchett, Submitted for *M. LaPlant v. Northwestern Mutual Life Company*, July 2, 2010

Expert Report of Bruce W. Foudree, Submitted for *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company, a Wisconsin mutual insurance corporation*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 08-CV-11988, August 6, 2010

Expert Report of Stephen N. Steinig, Submitted for *M. LaPlant v. Northwestern Mutual Life Company*, August 6, 2010

Affidavit of Nicholas J. Sales, *Marleen M. LaPlant, on her own behalf and on behalf of a class similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Eastern District of Wisconsin, Case No. 2:11-CV-00910, November 17, 2011

Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for *M. LaPlant v. Northwestern Mutual Life Company*, Hoyer Actuarial Litigation, LLC, March 4, 2013

Beverly E. Krueger v. The Northwestern Mutual Life Insurance Company

Northwestern Mutual's Memorandum in Opposition to Plaintiff's Motion for Class Certification, *Beverly E. Krueger, on behalf of themselves and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, Case No. 1:10-CV-00128-SPM, April 15, 2011

Affidavit of Chris G. Trost, *Beverly E. Krueger and Richard A. Race, on behalf of themselves and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, June 30, 2010

Affidavit of Nicholas J. Sales, *Beverly E. Krueger, on behalf of herself and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, Case No. 1:10-CV-00128-SPM, August 13, 2010

Affidavit of Chris G. Trost, *Beverly E. Krueger, on behalf of themselves and all others similarly situated v. The Northwestern Mutual Life Insurance Company*, United States District Court, Northern District of Florida, Gainesville Division, Case No. 1:10-CV-00128-SPM, April 15, 2011

Catherine D. Noonan and Daniel A. Noonan v. The Northwestern Mutual Life Insurance Company et al.

Decision on Motion to Certify for Class Action, *Catherine D. Noonan and Daniel A. Noonan v. The Northwestern Mutual Life Insurance Company et al.*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 01-CV-12349, July 6, 2005

Decision on Motions to Certify for Class Action and Summary Judgment, *Catherine D. Noonan and Daniel A. Noonan v. The Northwestern Mutual Life Insurance Company et al.*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 01-CV-12349, January 25, 2008

Affidavit of Robert L. Hoyer, *Catherine D. Noonan and Daniel A. Noonan v. The Northwestern Mutual Life Insurance Company, et al.*, State of Wisconsin Circuit Court, Milwaukee County, Case No. 01-CV-012349, March 8, 2005

Other

Comcast Corp. v. Behrend, 133 S. Ct. 1426 (2013)

Articles and Book Chapters

ABA Section of Antitrust Law, *Proving Antitrust Damages, Legal and Economic Issues*, 2nd ed., American Bar Association, (2010)

Allen, Mark A., et al., “Reference Guide on Estimation of Economic Losses in Damages Awards,” in *Reference Manual on Scientific Evidence*, The National Academies Press, (2011): 425-502

Angrist, Joshua D., and Alan B. Krueger, “Chapter 23 Empirical strategies in labor economics,” in *Handbook of Labor Economics*, Vol. 3, (1999): 1277-1366

Bardrinath, SG, Jayant R. Kale and Harley E. Ryan, Jr., “Characteristics of Common Stock Holdings of Insurance Companies,” *The Journal of Risk and Insurance*, Vol. 63, No. 1 (Mar., 1996): 49-76

Bernheim, B. Douglas, and John B. Shoven, “Pension Funding and Saving,” in *Pensions in the US Economy*, University of Chicago Press, (1988): 85-114

Brealey, Richard A. and Stewart C. Myers, *Principles of Corporate Finance*, McGraw-Hill, Inc., 4th ed., (1991)

Downes, John and Jordan E. Goodman, *Dictionary of Finance and Investment Terms*, Barron’s Educational Series, (2010)

Gibson, William E. and James L. Pierce, “Deposit Demand, ‘Hot Money,’ and the Viability of Thrift Institutions,” *Brookings Papers on Economic Activity*, 1974, No. 3 (1974): 593-636

Holt, Charles A. and Susan K. Laury, "Risk Aversion and Incentive Effects," *The American Economic Review*, Vol. 92, No. 5, (Dec., 2002): 1644-1655

Marquard, Steven, *The Distortion Theory of Macroeconomic Forecasting: A Guide for Economists and Investors*, Greenwood Publishing Group, Inc. (1994)

Office of Fair Trading, *Consumer Contracts*, Crown Publishing, (2011): 1-116

Rosen, Kenneth T. and Larry Katz, "Money Market Mutual Funds: An Experiment in Ad Hoc Deregulation: A Note," *The Journal of Finance*, Vol. 38, No. 3, (1983): 1011-1017

Vitt, Lois A., "Risk Tolerance," in *Encyclopedia of Retirement and Finance*, Volume 1, Greenwood Publishing Group, Inc., (2003)

Depositions and Trial Testimony

Deposition of Jacqueline Baumgart, June 16, 2010

Deposition of Thomas Colbert, July 23, 2010

Deposition of Thomas Dyer, May 13, 2010

Deposition of Michael J. Holden, May 25, 2010

Deposition of Robert L. Hoyer, May 17, 2013

Deposition of Russell R. Jensen, June 15, 2010

Deposition of John Komives, May 18, 2010

Deposition of Gerald Kreitzman, June 10, 2010

Deposition of Marleen LaPlant, September 9, 2009

Deposition of Caroline Meckes, June 10, 2010

Deposition of Janet Reichart, June 16, 2010

Deposition of William J. Timmers, July 23, 2010

Deposition of Bruce Williams, May 18, 2010

Testimony of Daniel Noonan, November 8, 2010

Non-Bates Numbered Deposition Exhibits

Exhibits 1 - 9 to deposition of Robert L. Hoyer, May 17, 2013

Exhibit 167 to deposition of Gerald Kreitzman, June 10, 2010

Exhibit 1 to deposition of Marleen LaPlant, September 9, 2009

***Marleen M. LaPlant v. Northwestern Mutual* Trial Exhibits**

Trial Exhibit 15

Trial Exhibit 16

Trial Exhibit 67

Trial Exhibit 73

Trial Exhibit 74

Trial Exhibit 102

Trial Exhibit 121

Trial Exhibit 154

Trial Exhibit 155

Trial Exhibit 157

Trial Exhibit 180

Trial Exhibit 189

Trial Exhibit 261

Trial Exhibits 269 - 286

Trial Exhibit 312

Trial Exhibit 314

Trial Exhibit 316

Trial Exhibits 319 to 335

Trial Exhibit 340

Trial Exhibit 342

Trial Exhibit 356

Trial Exhibit 385

Trial Exhibit 424

Trial Exhibit 528

Other Bates Numbered Documents

ML_NML0446 to ML_NML0459	ML2_NM_4818 to ML2_NM_4819
ML_NML2_0503	ML2_NM_4820 to ML2_NM_4829
ML_NML2_0504	ML2_NM_4830 to ML2_NM_4831
ML_NML2_0505	ML2_NM_4832 to ML2_NM_4836
ML_NML2_0506	ML2_NM_4837 to ML2_NM_4838
ML_NML2_0513 to ML_NML2_0519	ML2_NM_4877 to ML2_NM_4882
ML_NML2_0528	ML2_NM_5553 to ML2_NM_5555
ML_NML2_0533	ML2_NM_5556 to ML2_NM_5563
ML_NML2_0537 to ML_NML2_0538	ML2_NM_5564 to ML2_NM_5572
ML_NML2_0575 to ML_NML2_0576	ML2_NM_5573 to ML2_NM_5575
ML_NML3_0209 to ML_NML3_0217	ML2_NM_5576 to ML2_NM_5579
ML_NML3_0218 to ML_NML3_0234	ML2_NM_5580 to ML2_NM_5587
ML_NML3_0235 to ML_NML3_0249	ML2_NM_5588 to ML2_NM_5595
ML_NML3_0380 to ML_NML3_0503	ML2_NM_5596 to ML2_NM_5600
ML_NML3_0446	ML2_NM_5601 to ML2_NM_5609
ML_NML3_3604 to ML_NML3_3605	ML2_NM_6738 to ML2_NM_6739
ML_NML3_3606 to ML_NML3_3608	ML2_NM_6740 to ML2_NM_6747
ML_NML3_3609 to ML_NML3_3626	ML2_NM_6748
ML_NML3_3627 to ML_NML3_3629	ML2_NM_6749 to ML2_NM_6754
ML_NML3_3630 to ML_NML3_3631	ML2_NM_6755 to ML2_NM_6758
ML_NML3_3632 to ML_NML3_3637	ML2_NM_6759 to ML2_NM_6780
ML_NML3_3638 to ML_NML3_3640	ML2_NM_6781
ML_NML3_3641 to ML_NML3_3661	ML2_NM_6782 to ML2_NM_6815
ML2_NM_4518 to ML2_NM_4529	ML2_NM_6816
ML2_NM_4552 to ML2_NM_4569	ML2_NM_6817 to ML2_NM_6818
ML2_NM_4805 to ML2_NM_4806	ML2_NM_6819 to ML2_NM_6822
ML2_NM_4807 to ML2_NM_4817	ML2_NM_6827

Other Publicly Available Documents

Northwestern Mutual, “Northwestern Mutual Facts for 2013,” May 2013, available at <http://www.northwesternmutual.com/about-northwestern-mutual/our-company/Documents/fact_sheet.pdf>, accessed on June 17, 2013

Sullivan, Paul, “Annuities: What You Need to Know,” *The New York Times*, January 27, 2009, available at <<http://www.nytimes.com/2009/01/28/your-money/annuities/primerannuities.html?ref=annuities>>, accessed on June 17, 2013

U.S. Department of Labor Bureau of Labor Statistics, “Consumer Price Index,” last updated June 18, 2013, available at <<ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.ai.txt>>, accessed on June 24, 2013

U.S. Securities and Exchange Commission, “Annuities,” April 6, 2001, available at <<http://www.sec.gov/answers/annuity.htm>>, accessed on June 17, 2013

Data Files

1983_12 PreMNAnn Plans_R2.txt

1985_12 Assoc CRA Plans_R2.txt

Annuity Termination Data.xlsx

Data+Field+Definitions+May3+File.xlsx

LaPlant Life policies 1983_2012 File1.txt

LaPlant Life policies 1983_2012 File2.txt

List of 36,935 Annuities Updated.xlsx

Exhibit 1

Determination of Putative Class

	<u>Annuities</u>
Potential Class Annuities Identified by Northwestern Mutual	36,935
Policies Excluded from Potential Class	
Policies Terminated Prior to March 31, 1985	28
Policies Dated After March 31, 1985	66
HE Series Policies	1,549
KL Series Policies	89
Non-Participating Policy	<u>1</u>
Subtotal	<u><u>1,733</u></u>
Potential Class Annuities: Total Less Exclusions	35,202
Update '83 Status of Potential Class Annuities	
Not Eligible	11,306
Not Signed	6,131
Signed in Wisconsin	2,229
Signed Outside Wisconsin	15,467
Unknown	69
Putative Class:	
Annuities (Potential Class Annuities Less Signed Outside Wisconsin)	19,735
Annuitants	18,553

Notes:

- [1] The 1,549 "HE Series Policies" are employee plans which are not included in the class according to Trial Ex. 404.
- [2] The 89 "KL Series Policies" are employee plans which are not included in the class according to Trial Ex. 404.
- [3] The one "Non-Participating Policy" is a non-participating policy with no annual change in cash value.
- [4] The 11,306 "Not Eligible" annuities are those that were issued after the implementation of Update '83.
- [5] The 6,131 "Not Signed" annuities are those that were eligible for Update '83 but never amended.
- [6] The 69 "Unknown" annuities are those with values of "Unknown" or "???" for the "Update '83 Details" field in the data.

Sources:

- [1] List of 36,935 Annuities Updated.xlsx.
- [2] Annuity Termination Data.xlsx.
- [3] 1983_12 PreMNAnn Plans_R2.txt.

Exhibit 2

Current Residence of Putative Class Members with In-Force Annuities

State/Country	Number of Putative Class Members	State/Country	Number of Putative Class Members
AK	5	NC	45
AL	21	ND	29
AR	10	NE	24
AZ	29	NH	16
CA	116	NJ	40
CO	41	NM	20
CT	44	NV	14
DC	4	NY	136
DE	2	OH	124
FL	121	OK	31
GA	35	OR	24
HI	20	PA	145
IA	97	RI	26
ID	14	SC	18
IL	206	SD	31
IN	97	TN	15
KS	32	TX	74
KY	29	UT	24
LA	11	VA	53
MA	48	VT	9
MD	42	WA	35
ME	14	WI	391
MI	114	WV	26
MN	74	WY	2
MO	53		
MS	11	Canada	1
MT	14	Other Country	7
		Total	2,664

Note:

[1] The total of 2,664 corresponds to the number of putative class members with at least one Pre-MN annuity in-force as of year end 2012.

Sources:

- [1] List of 36,935 Annuities Updated.xlsx.
- [2] Annuity Termination Data.xlsx.
- [3] 1983_12 PreMNAnn Plans_R2.txt.
- [4] Data+Field+Definitions+May3+File.xlsx.

Exhibit 3
Putative Class Members with Simultaneous Life and Annuity Policies In-Force
1985 - 2012

Year	Total Class Annuities	Total Class Policyholders	Policyholders with Simultaneous Policies	Percent of Class with Simultaneous Policies
1985	19,735	18,553	9,043	48.7%
1986	18,579	17,482	8,613	49.3%
1987	16,970	16,000	7,968	49.8%
1988	15,438	14,591	7,236	49.6%
1989	14,490	13,703	6,831	49.9%
1990	13,531	12,815	6,386	49.8%
1991	12,695	12,046	6,020	50.0%
1992	11,972	11,370	5,717	50.3%
1993	11,304	10,738	5,402	50.3%
1994	10,692	10,162	5,125	50.4%
1995	10,011	9,526	4,792	50.3%
1996	9,347	8,900	4,474	50.3%
1997	8,556	8,149	4,077	50.0%
1998	7,744	7,386	3,681	49.8%
1999	6,978	6,676	3,301	49.4%
2000	6,409	6,144	3,029	49.3%
2001	5,831	5,596	2,732	48.8%
2002	5,450	5,235	2,552	48.7%
2003	5,132	4,935	2,412	48.9%
2004	4,856	4,681	2,298	49.1%
2005	4,570	4,408	2,172	49.3%
2006	4,316	4,161	2,058	49.5%
2007	4,041	3,895	1,929	49.5%
2008	3,724	3,596	1,803	50.1%
2009	3,467	3,350	1,699	50.7%
2010	3,268	3,160	1,611	51.0%
2011	3,093	2,990	1,532	51.2%
2012	2,905	2,807	1,438	51.2%
1985 - 2012	19,735	18,553	9,931	53.5%

Notes:

[1] "Total Class Annuities" corresponds to the annual total number of putative class annuities that are in-force or that have been terminated in each respective year.

[2] "Total Class Policyholders" corresponds to the annual total number of putative class policyholders with annuity policies in-force or policies that have been terminated in each respective year.

[3] As of 2012, 4,860 putative class members had life policies in-force. Of these, 1,374 either terminated or surrendered their annuity policies before 1994.

Sources:

[1] List of 36,935 Annuities Updated.xlsx.

[2] Annuity Termination Data.xlsx.

[3] 1983_12 PreMNAnn Plans_R2.txt.

[4] LaPlant Life policies 1983_2012 File1.txt.

[5] LaPlant Life policies 1983_2012 File2.txt.

Exhibit 4
Putative Class Members' CRA Purchases
1985 - 2012

Year	Total Class Annuities	Total Class Policyholders	Class Members who Purchased CRAs
1985	19,735	18,553	606
1986	18,579	17,482	157
1987	16,970	16,000	169
1988	15,438	14,591	178
1989	14,490	13,703	229
1990	13,531	12,815	169
1991	12,695	12,046	155
1992	11,972	11,370	79
1993	11,304	10,738	30
1994	10,692	10,162	55
1995	10,011	9,526	60
1996	9,347	8,900	26
1997	8,556	8,149	15
1998	7,744	7,386	7
1999	6,978	6,676	4
2000	6,409	6,144	5
2001	5,831	5,596	15
2002	5,450	5,235	14
2003	5,132	4,935	13
2004	4,856	4,681	5
2005	4,570	4,408	5
2006	4,316	4,161	5
2007	4,041	3,895	4
2008	3,724	3,596	10
2009	3,467	3,350	25
2010	3,268	3,160	8
2011	3,093	2,990	9
2012	2,905	2,807	0
1985 - 2012	19,735	18,553	1,665

Notes:

- [1] "Total Class Annuities" corresponds to the annual total number of putative class annuities that are in-force or that have been terminated in each respective year.
- [2] "Total Class Policyholders" corresponds to the annual total number of putative class policyholders with annuity policies in-force or policies that have been terminated in each respective year.
- [3] The count of annual putative class members who purchased CRAs does not sum to the 1,665 total shown for 1985 - 2012 because some putative class members purchased more than one CRA during the period shown.

Sources:

- [1] List of 36,935 Annuities Updated.xlsx.
- [2] Annuity Termination Data.xlsx.
- [3] 1983_12 PreMNAnn Plans_R2.txt.
- [4] 1985_12 Assoc CRA Plans_R2.txt.

Exhibit 5

Selected Characteristics of At-Issue Annuities

Premium Modes	Policy Loan Rates
Flexible premiums (“FPA”)	5% compounded annually
Fixed premiums (“RA”)	6% compounded annually
Single premium (“SPRA”)	8% compounded annually
Maturity Options	Dividend Payout Options
Cash payout	Cash payout
Interest Income Plan	Premium payment
Installment Income Plans	Purchase policy additions
Specified Period	
Specified Amount	
Life Income Plans	
Single Life Income	
Joint and Survivor Life Income	

Note:

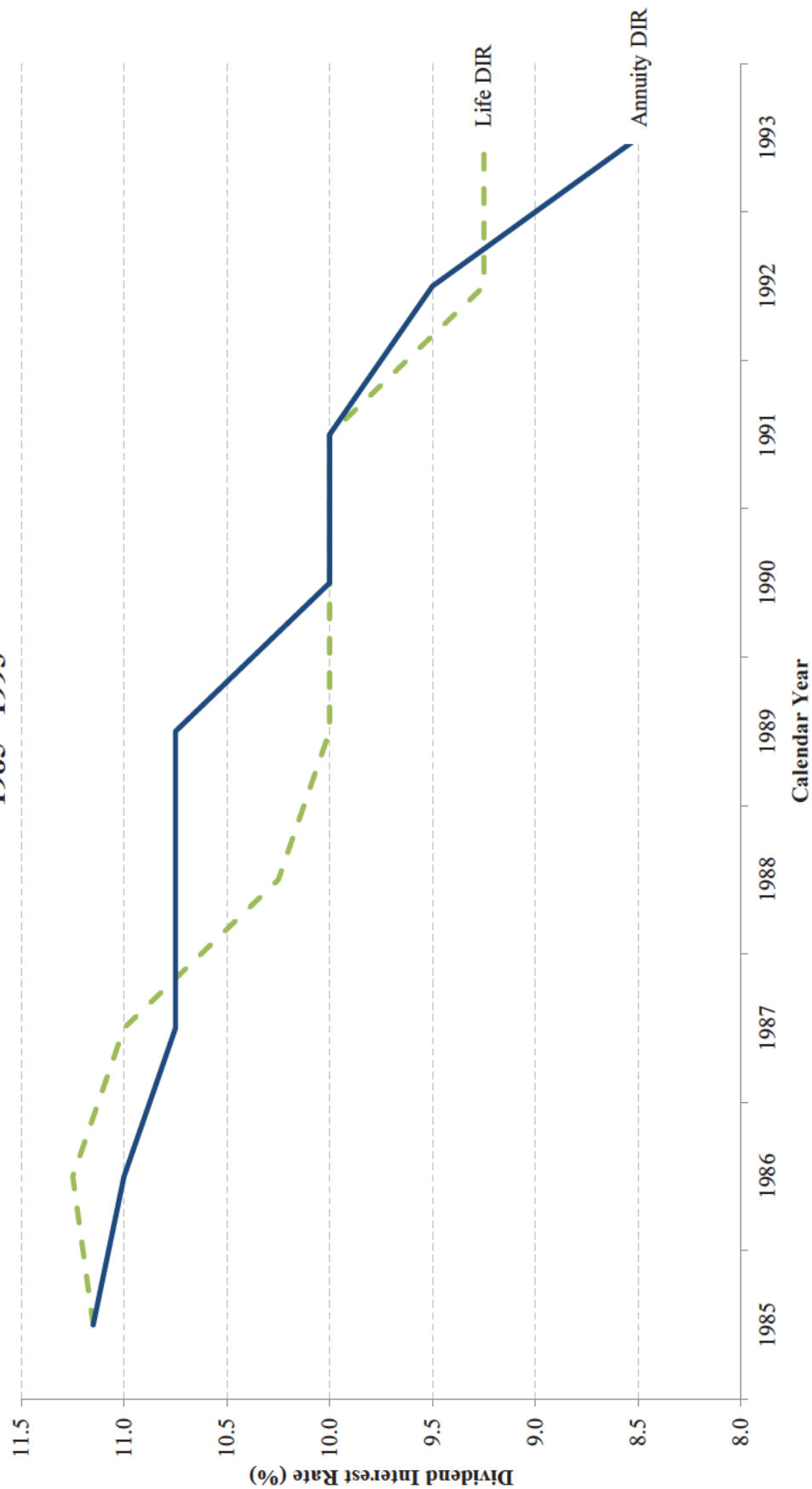
[1] “Dividend Payout Options” and “Maturity Options” are based on Marleen M. LaPlant’s Fixed Premium Annuity contract.

Sources:

[1] Trial Exhibit 121, LaPlant Contract.

[2] Trial Exhibits 319 to 335, Sample Contracts.

Exhibit 6
Pre-MN Annuity and Life Policy DIRs
For Policies with Direct Recognition and No Policy Borrowing
1985 - 1993



Notes:

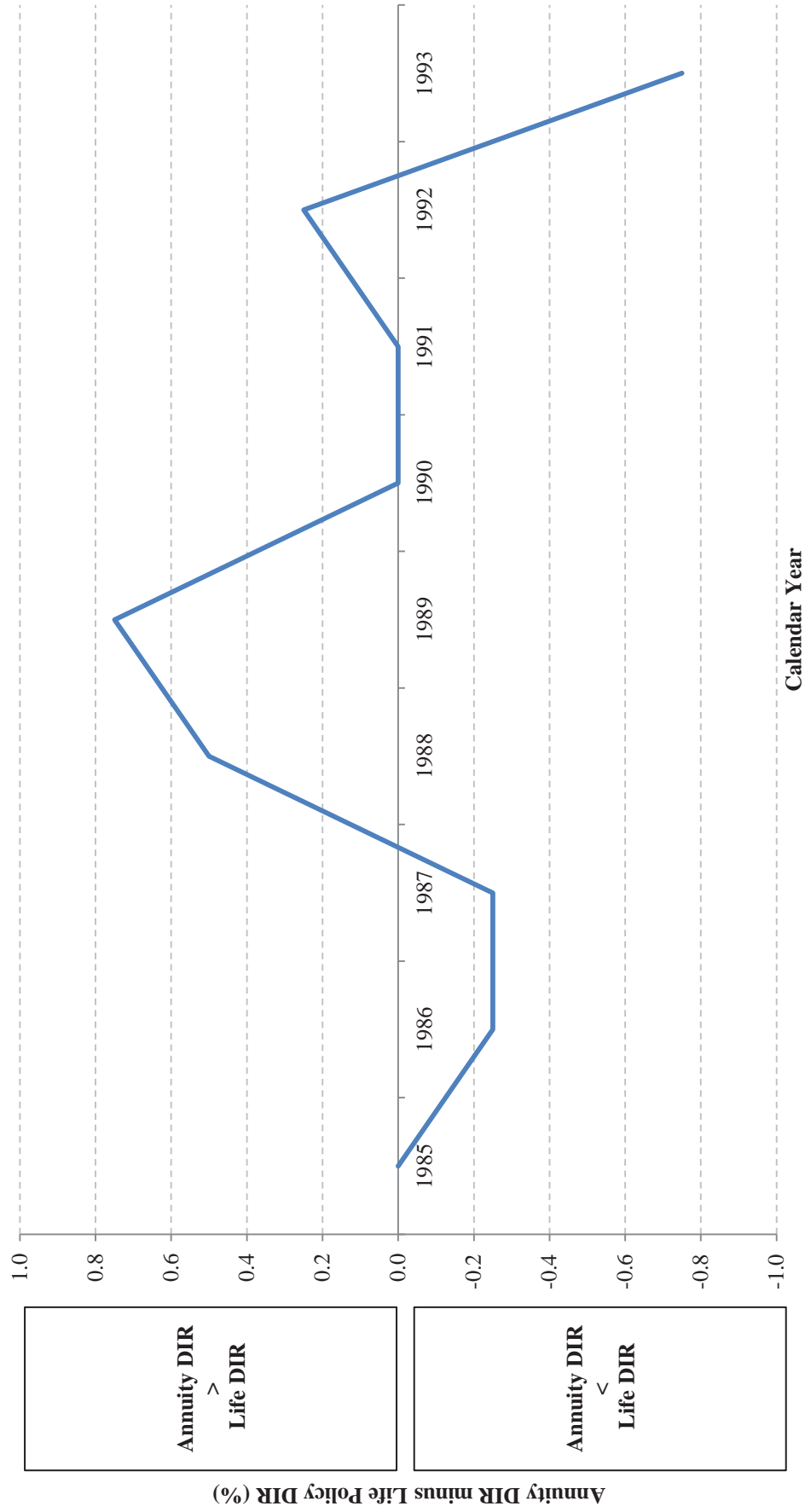
[1] DIR values are as reported for tax qualified policies.

[2] "Life" and "Annuity" values are for "Employee Life Insurance" and "Retirement Annuity" policies, respectively.

Source:

[1] Trial Exhibit 189, Dividend Interest Rate Tables.

Exhibit 7
Percentage Point Spread between Pre-MN Annuity and Life Policy DIRs
For Policies with Direct Recognition and No Policy Borrowing
1985 - 1993



Notes:
 [1] DIR values are as reported for tax qualified policies.
 [2] "Life" and "Annuity" values are for "Employee Life Insurance" and "Retirement Annuity" policies, respectively.
 [3] Spread calculated as the difference between Annuity and Life policy DIRs for non-borrowed policies with direct recognition.

Source:
 [1] Trial Exhibit 189, Dividend Interest Rate Tables.

Exhibit 8

Difference in Rates of Accumulation of Net Deposits Made by Pre-MN Annuitants with Direct Recognition and No Policy Borrowing Deposited in Column Year and Withdrawn in Row Year

Based on Hoyer Report Table 9

All Zero and Negative Values Highlighted

1985 - 1994

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1985	0.00	-	X	X	X	X	X	X	X	X	X
1986	0.28	0.25	-	X	X	X	X	X	X	X	X
1987	0.62	0.56	0.25	-	X	X	X	X	X	X	X
1988	0.00	0.00	-0.28	-0.50	-	X	X	X	X	X	X
1989	-1.14	-1.02	-1.23	-1.38	-0.75	-	X	X	X	X	X
1990	-1.25	-1.13	-1.35	-1.52	-0.82	0.00	-	X	X	X	X
1991	-1.38	-1.24	-1.48	-1.67	-0.91	0.00	0.00	-	X	X	X
1992	-2.01	-1.81	-2.03	-2.20	-1.33	-0.30	-0.28	-0.25	-	X	X
1993	-0.53	-0.48	-0.87	-1.18	-0.35	0.66	0.60	0.55	0.75	-	X
1994	1.83	1.65	1.01	0.48	1.21	2.16	1.96	1.78	1.90	1.00	-

Note:

[1] Values expressed as percentages.

Sources:

[1] Trial Exhibit 189, Dividend Interest Rate Tables.

[2] Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for M. LaPlant v. Northwestern Mutual Life Company, Hoyer Actuarial Litigation, LLC, March 4, 2013.

Exhibit 9
Timing of Terminations for Annuities Included in the Putative Class
1985 - 2012

Year	Number Terminated					Percent of Remaining Policies Terminated	Percent of Putative Class Policies Terminated
	Death	Maturity	Surrender	Other	Total		
1985	44	120	990	2	1,156	5 9%	5 9%
1986	67	190	1,349	3	1,609	8 7%	8 2%
1987	76	197	1,258	1	1,532	9 0%	7 8%
1988	53	189	704	2	948	6 1%	4 8%
1989	67	219	673	0	959	6 6%	4 9%
1990	67	194	575	0	836	6 2%	4 2%
1991	50	175	498	0	723	5 7%	3 7%
1992	55	124	489	0	668	5 6%	3 4%
1993	51	143	418	0	612	5 4%	3 1%
1994	42	167	472	0	681	6 4%	3 5%
1995	63	164	437	0	664	6 6%	3 4%
1996	51	139	601	0	791	8 5%	4 0%
1997	34	152	626	0	812	9 5%	4 1%
1998	37	135	594	0	766	9 9%	3 9%
1999	36	113	420	0	569	8 2%	2 9%
2000	38	85	455	0	578	9 0%	2 9%
2001	20	69	292	0	381	6 5%	1 9%
2002	30	77	211	0	318	5 8%	1 6%
2003	42	69	165	0	276	5 4%	1 4%
2004	40	83	163	0	286	5 9%	1 4%
2005	28	57	169	0	254	5 6%	1 3%
2006	30	55	190	0	275	6 4%	1 4%
2007	24	47	246	0	317	7 8%	1 6%
2008	26	57	174	0	257	6 9%	1 3%
2009	37	59	103	0	199	5 7%	1 0%
2010	37	36	102	0	175	5 4%	0 9%
2011	40	42	106	0	188	6 1%	1 0%
2012	32	47	79	0	158	5 4%	0 8%
Total Terminated	1,217	3,204	12,559	8	16,988		86 1%
1985, 1988-1993	387	1,164	4,347	4	5,902		29 9%

Notes:

[1] "Percent of Remaining Policies Terminated" corresponds to the number of policies terminated annually expressed as a percentage of the number of policies in-force as of the beginning of each respective year

[2] "Percent of Putative Class Policies Terminated" is expressed as a percentage of the 19,735 annuities that are part of the class as specified in Exhibit 1

[3] As of year end 2012, 2,747 putative class policies remain in force

Sources:

[1] List of 36,935 Annuities Updated.xlsx

[2] Annuity Termination Data.xlsx

[3] 1983_12 PreMNAnn Plans_R2.txt

Exhibit 10
DIRs for Life and Annuity Policies
1976 - 1984

Year	Annuity	Life	Difference
	[A]	[B]	[A] - [B]
1976	6.15%	6.15%	0.00%
1977	6.50%	6.50%	0.00%
1978	7.25%	7.25%	0.00%
1979	7.50%	7.50%	0.00%
1980	8.50%	8.65%	(0.15%)
1981	9.00%	9.15%/8.65%	(0.15%)/0.35%
1982	9.75%	10.15%	(0.40%)
1983	10.85%	11.00%	(0.15%)
1984	11.00%	11.15%	(0.15%)

Notes:

[1] From 1976 to 1981, the DIRs are for tax qualified policies without direct recognition. From 1982 to 1984, the dividend interest rates are for tax qualified policies with direct recognition and no borrowing.

[2] In 1981, the DIRs for life insurance policies with a loan rate of 8% was 9.15%. For life policies with a loan rate of 6% or 5%, the DIR was 8.65%.

[3] "Life" and "Annuity" values are for "Employee Life Insurance" and "Retirement Annuity" policies, respectively.

Source:

[1] Trial Exhibit 189, Dividend Interest Rate Tables.

Exhibit 11
Pre-MN Annuity Surrenders
1976 - 1982

Year	Tax-Qualified		Average 90-Day		FPA and RA		FPAs and RAs		Spread between DIR and		Percent
	DIR	[A]	Treasury Bill	[B]	Surrenders	[C]	In-Force	[D]	90-Day Treasury Bill	[A] - [B]	
1976	6.2%		5.1%		3,155		37,502		1.1%		8.4%
1977	6.5%		5.4%		2,828		37,706		1.1%		7.5%
1978	7.3%		7.6%		2,858		38,819		-0.4%		7.4%
1979	7.5%		10.7%		3,117		39,343		-3.2%		7.9%
1980	8.5%		12.5%		3,822		38,559		-4.0%		9.9%
1981	9.0%		15.4%		5,196		35,419		-6.4%		14.7%
First 5 months of 1982	9.8%		13.1%		3,188		33,366		-3.4%		

Notes:

[1] "Percent Surrendered" was not calculated for 1982 because values reported are for the first five months of the year only.

[2] Source document includes FPAs and RAs but does not mention SPRAs. As a result, SPRAs are not included here.

Source:

[1] Employee Plans Product Development Committee, titled "July 29th Meeting Minutes" (ML2_NM_4552 to ML2_NM_4569).

Exhibit 12

Timing of Update '83 for Annuities Included in Putative Class 1982 - 2012

Year	Number Updated	Percent of Eligible Policies Updated
1982	291	3.5%
1983	1,767	21.0%
1984	57	0.7%
1985	32	0.4%
1986	23	0.3%
1987	23	0.3%
1988	6	0.1%
1989	8	0.1%
1990	9	0.1%
1991	6	0.1%
1992	5	0.1%
1993	1	0.0%
1994 - 2012	0	0.0%
1985 - 1993	113	1.3%

Notes:

[1] "Percent of Eligible Policies Updated" corresponds to the annual number of policy amendments expressed as a percentage of the 8,429 annuities included in the class that were eligible for the Update '83 policy amendment. This total was calculated by counting all of the annuities in this dataset with values of "never did," "Unknown," "WI," or "???" for the "Update '83 Details" field.

[2] There are 7 policies that accepted the amendment that were missing data to determine the timing of acceptance. These policies are excluded from the exhibit.

Sources:

[1] List of 36,935 Annuities Updated.xlsx.

[2] Annuity Termination Data.xlsx.

[3] 1983_12 PreMNAnn Plans_R2.txt.

Appendix Exhibit 1-A
Difference in Rates of Accumulation of Net Deposits Made by Pre-MN Annuitants with Direct Recognition and No Policy Borrowing
 Deposited in Column Year and Withdrawn in Row Year
 Based on Hoyer Report Table 9
 All Zero and Negative Values Highlighted
1985 - 2010

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1985	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1986	0.28	0.25	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1987	0.62	0.56	0.25	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1988	0.00	0.00	-0.28	-0.50	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1989	-1.14	-1.02	-1.23	-1.38	-0.75	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1990	-1.25	-1.13	-1.35	-1.52	-0.82	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1991	-1.38	-1.24	-1.48	-1.67	-0.91	0.00	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1992	-2.01	-1.81	-2.03	-2.20	-1.33	-0.30	-0.28	-0.25	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1993	-0.53	-0.48	-0.87	-1.18	-0.35	0.66	0.60	0.55	0.75	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1994	1.83	1.65	1.01	0.48	1.21	2.16	1.96	1.78	1.90	1.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1995	5.87	5.28	4.24	3.37	3.88	4.66	4.24	3.85	3.81	2.70	1.50	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1996	10.53	9.47	7.97	6.70	6.96	7.53	6.85	6.23	6.01	4.65	3.23	1.50	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1997	17.35	15.61	13.46	11.60	11.47	11.71	10.65	9.68	9.19	7.51	5.80	3.77	2.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X
1998	26.14	23.52	20.53	17.94	17.28	17.08	15.53	14.11	13.27	11.18	9.11	6.72	4.63	2.30	-	X	X	X	X	X	X	X	X	X	X	X	X
1999	36.18	32.55	28.61	25.18	23.91	23.20	21.09	19.17	17.92	15.38	12.90	10.10	7.64	4.95	2.30	-	X	X	X	X	X	X	X	X	X	X	X
2000	47.60	42.83	37.80	33.43	31.46	30.15	27.41	24.92	23.20	20.15	17.22	13.96	11.09	8.00	4.95	2.30	-	X	X	X	X	X	X	X	X	X	X
2001	60.57	54.49	48.24	42.79	40.03	38.04	34.58	31.44	29.20	25.57	22.12	18.36	15.03	11.48	8.00	4.95	2.30	-	X	X	X	X	X	X	X	X	X
2002	75.32	67.77	60.13	53.46	49.78	47.01	42.74	38.85	36.01	31.73	27.71	23.38	19.54	15.49	11.52	8.04	5.00	2.35	-	X	X	X	X	X	X	X	X
2003	92.07	82.84	73.63	65.58	60.85	57.18	51.98	47.25	43.72	38.72	34.06	29.12	24.71	20.11	15.61	11.66	8.18	5.15	2.45	-	X	X	X	X	X	X	X
2004	111.49	100.31	89.29	79.65	73.68	68.93	62.67	56.97	52.64	46.82	41.44	35.81	30.77	25.56	20.48	15.99	12.04	8.58	5.49	2.70	-	X	X	X	X	X	X
2005	133.51	120.12	107.06	95.62	88.23	82.25	74.78	67.98	62.74	56.00	49.83	43.42	37.68	31.80	26.08	21.01	16.53	12.58	9.07	5.90	2.85	-	X	X	X	X	X
2006	159.33	143.34	127.89	114.36	105.29	97.85	88.96	80.87	74.56	66.76	59.66	52.38	45.84	39.19	32.73	26.99	21.91	17.41	13.41	9.80	6.36	3.15	-	X	X	X	X
2007	187.76	168.93	150.85	135.00	124.09	115.03	104.57	95.06	87.58	78.61	70.50	62.26	54.83	47.35	40.09	33.62	27.87	22.78	18.24	14.15	10.28	6.67	3.15	-	X	X	X
2008	219.05	197.08	176.11	157.72	144.76	133.92	121.75	110.68	101.89	91.64	82.44	73.13	64.75	56.35	48.21	40.95	34.48	28.72	23.59	18.98	14.64	10.60	6.67	3.15	-	X	X
2009	245.54	220.91	197.49	176.94	162.27	149.94	136.31	123.91	114.04	102.69	92.53	82.31	73.09	63.89	54.99	47.03	39.93	33.60	27.96	22.89	18.15	13.74	9.45	5.60	2.15	-	X
2010	270.75	243.59	217.83	195.22	178.93	165.19	150.17	136.52	125.60	113.20	102.12	91.02	80.99	71.02	61.37	52.74	45.03	38.16	32.02	26.52	21.37	16.60	11.96	7.79	4.06	1.70	-

Note:

[1] Values expressed as percentages.

Sources:

[1] Trial Exhibit 189, Dividend Interest Rate Tables.

[2] Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for M. LaPlant v. Northwestern Mutual Life Company, Hoyer Actuarial Litigation, LLC, March 4, 2013.

Appendix Exhibit 1-B
Difference in Rates of Accumulation of Net Deposits Made by Pre-MIN Annuitants without Direct Recognition and a 8% Policy Loan Rate
 Deposited in Column Year and Withdrawn in Row Year
 Based on Hoyer Report Table 9
 All Zero and Negative Values Highlighted
1985 - 2010

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1985	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1986	0.24	0.22	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1987	0.54	0.49	0.22	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1988	0.00	0.00	-0.24	-0.44	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1989	-0.98	-0.88	-1.06	-1.20	-0.66	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1990	-1.07	-0.97	-1.17	-1.32	-0.72	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1991	-1.17	-1.06	-1.28	-1.45	-0.79	0.00	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1992	-1.71	-1.55	-1.75	-1.90	-1.15	-0.26	-0.24	-0.22	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1993	-0.45	-0.41	-0.75	-1.02	-0.30	0.58	0.53	0.48	0.66	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1994	1.85	1.67	1.10	0.63	1.24	2.05	1.87	1.70	1.80	1.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1995	5.13	4.64	3.75	3.00	3.45	4.13	3.77	3.43	3.40	2.43	1.25	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1996	8.92	8.07	6.81	5.74	6.00	6.52	5.94	5.42	5.24	4.07	2.69	1.25	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1997	15.06	13.62	11.80	10.22	10.13	10.35	9.44	8.61	8.19	6.72	5.07	3.36	1.87	-	X	X	X	X	X	X	X	X	X	X	X	X	X
1998	22.97	20.78	18.23	16.01	15.45	15.28	13.94	12.71	11.96	10.13	8.14	6.11	4.34	2.16	-	X	X	X	X	X	X	X	X	X	X	X	X
1999	32.01	28.95	25.57	22.63	21.53	20.90	19.06	17.38	16.27	14.03	11.66	9.27	7.16	4.64	2.16	-	X	X	X	X	X	X	X	X	X	X	X
2000	42.29	38.25	33.93	30.16	28.44	27.29	24.89	22.70	21.17	18.47	15.66	12.87	10.39	7.49	4.64	2.16	-	X	X	X	X	X	X	X	X	X	X
2001	53.96	48.81	43.42	38.71	36.29	34.54	31.50	28.73	26.73	23.50	20.21	16.96	14.08	10.75	7.49	4.64	2.16	-	X	X	X	X	X	X	X	X	X
2002	67.40	60.97	54.35	48.56	45.33	42.87	39.10	35.66	33.11	29.29	25.46	21.70	18.35	14.56	10.84	7.58	4.73	2.24	-	X	X	X	X	X	X	X	X
2003	82.50	74.63	66.65	59.65	55.49	52.23	47.63	43.44	40.27	35.80	31.36	27.05	23.19	18.88	14.67	10.96	7.71	4.86	2.29	-	X	X	X	X	X	X	X
2004	100.31	90.74	81.15	72.74	67.46	63.23	57.67	52.59	48.69	43.46	38.34	33.40	28.97	24.08	19.31	15.10	11.39	8.14	5.20	2.58	-	X	X	X	X	X	X
2005	120.37	108.88	97.50	87.50	80.96	75.62	68.97	62.90	58.17	52.10	46.22	40.57	35.50	29.98	24.61	19.84	15.63	11.92	8.58	5.60	2.69	-	X	X	X	X	X
2006	144.04	130.30	116.79	104.93	96.88	90.22	82.28	75.04	69.33	62.28	55.53	49.07	43.26	37.01	30.94	25.54	20.76	16.53	12.72	9.32	6.03	3.00	-	X	X	X	X
2007	170.15	153.91	138.08	124.15	114.44	106.32	96.96	88.43	81.64	73.51	65.79	58.45	51.83	44.78	37.95	31.86	26.45	21.65	17.32	13.47	9.76	6.35	3.00	-	X	X	X
2008	198.90	179.92	161.52	145.32	133.77	124.04	113.13	103.17	95.19	85.88	77.10	68.79	61.28	53.37	45.70	38.85	32.75	27.32	22.43	18.08	13.92	10.10	6.35	3.00	-	X	X
2009	223.33	202.02	181.42	163.30	150.20	139.12	126.88	115.71	106.72	96.39	86.70	77.55	69.26	60.58	52.19	44.68	37.98	32.00	26.62	21.83	17.28	13.09	9.00	5.33	2.04	-	X
2010	246.75	223.20	200.50	180.52	165.95	153.58	140.06	127.74	117.78	106.47	95.89	85.92	76.89	67.47	58.36	50.20	42.92	36.41	30.55	25.34	20.40	15.86	11.43	7.45	3.89	1.64	-

Note:
 [1] Values expressed as percentages.

Sources:

- [1] Trial Exhibit 189, Dividend Interest Rate Tables.
 [2] Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for M. LaPlant v. Northwestern Mutual Life Company, Hoyer Actuarial Litigation, LLC, March 4, 2013.

Appendix Exhibit 1-C
Difference in Rates of Accumulation of Net Deposits Made by Pre-MIN Annuitants without Direct Recognition and a 6% Policy Loan Rate
Deposited in Column Year and Withdrawn in Row Year
Based on Hoyer Report Table 9
All Zero and Negative Values Highlighted
1985 - 2010

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1985	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1986	0.22	0.20	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1987	0.49	0.44	0.20	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1988	0.00	0.00	-0.22	-0.40	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1989	-0.88	-0.80	-0.97	-1.10	-0.60	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1990	-0.96	-0.87	-1.05	-1.20	-0.66	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1991	-1.05	-0.95	-1.15	-1.31	-0.72	0.00	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1992	-1.52	-1.37	-1.56	-1.70	-1.04	-0.24	-0.22	-0.20	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1993	-0.41	-0.37	-0.67	-0.92	-0.28	0.51	0.47	0.43	0.60	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1994	1.37	1.25	0.77	0.38	0.95	1.69	1.55	1.42	1.53	0.82	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1995	4.32	3.92	3.18	2.54	2.97	3.60	3.30	3.03	3.02	2.16	1.19	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1996	7.68	6.97	5.92	5.02	5.28	5.78	5.30	4.86	4.73	3.69	2.55	1.19	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1997	12.81	11.62	10.12	8.82	8.80	9.06	8.32	7.63	7.29	6.01	4.65	3.06	1.67	-	X	X	X	X	X	X	X	X	X	X	X	X	X
1998	19.38	17.57	15.51	13.70	13.31	13.26	12.17	11.16	10.57	8.99	7.35	5.49	3.84	1.92	-	X	X	X	X	X	X	X	X	X	X	X	X
1999	26.83	24.34	21.62	19.24	18.43	18.03	16.54	15.17	14.28	12.36	10.42	8.25	6.32	4.11	1.92	-	X	X	X	X	X	X	X	X	X	X	X
2000	35.27	31.99	28.55	25.51	24.23	23.41	21.48	19.71	18.48	16.19	13.90	11.38	9.14	6.62	4.11	1.92	-	X	X	X	X	X	X	X	X	X	X
2001	44.80	40.63	36.37	32.60	30.77	29.49	27.05	24.82	23.22	20.50	17.82	14.93	12.34	9.46	6.62	4.11	1.92	-	X	X	X	X	X	X	X	X	X
2002	55.69	50.51	45.31	40.71	38.25	36.42	33.42	30.66	28.62	25.42	22.32	19.00	16.03	12.75	9.53	6.68	4.18	1.98	-	X	X	X	X	X	X	X	X
2003	68.57	62.19	55.89	50.31	47.09	44.61	40.93	37.55	35.00	31.25	27.64	23.84	20.42	16.71	13.05	9.82	6.96	4.45	2.18	-	X	X	X	X	X	X	X
2004	82.85	75.14	67.63	60.97	56.90	53.68	49.25	45.18	42.05	37.70	33.56	29.23	25.34	21.15	17.04	13.38	10.15	7.29	4.72	2.25	-	X	X	X	X	X	X
2005	99.22	90.00	81.09	73.20	68.15	64.06	58.77	53.92	50.13	45.10	40.34	35.44	31.01	26.29	21.67	17.55	13.90	10.66	7.73	4.94	2.41	-	X	X	X	X	X
2006	118.61	107.58	97.04	87.69	81.46	76.34	70.04	64.26	59.68	53.85	48.39	42.81	37.77	32.44	27.23	22.58	18.44	14.76	11.43	8.27	5.41	2.70	-	X	X	X	X
2007	139.95	126.94	114.60	103.64	96.12	89.86	82.44	75.63	70.18	63.49	57.25	50.94	45.21	39.22	33.37	28.14	23.47	19.30	15.53	11.97	8.76	5.72	2.70	-	X	X	X
2008	163.40	148.20	133.89	121.17	112.22	104.70	96.06	88.12	81.73	74.08	66.99	59.87	53.41	46.69	40.15	34.28	29.03	24.33	20.08	16.08	12.48	9.08	5.72	2.70	-	X	X
2009	183.30	166.26	150.26	136.04	125.89	117.32	107.63	98.74	91.54	83.07	75.25	67.42	60.32	52.96	45.81	39.39	33.63	28.47	23.80	19.41	15.47	11.75	8.09	4.80	1.84	-	X
2010	202.72	183.87	166.23	150.54	139.23	129.63	118.93	109.11	101.12	91.84	83.30	74.78	67.04	59.06	51.30	44.33	38.06	32.45	27.37	22.60	18.32	14.29	10.33	6.76	3.55	1.53	-

Note:

[1] Values expressed as percentages.

Sources:

[1] Trial Exhibit 189, Dividend Interest Rate Tables.

[2] Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for M. LaPlant v. Northwestern Mutual Life Company, Hoyer Actuarial Litigation, LLC, March 4, 2013.

Appendix Exhibit 1-D
Difference in Rates of Accumulation of Net Deposits Made by Pre-MIN Annuitants without Direct Recognition and a 5% Policy Loan Rate
Deposited in Column Year and Withdrawn in Row Year
Based on Hoyer Report Table 9
All Zero and Negative Values Highlighted
1985 - 2010

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1985	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1986	0.21	0.19	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1987	0.45	0.41	0.19	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1988	0.00	0.00	-0.21	-0.37	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1989	-0.81	-0.73	-0.89	-1.02	-0.56	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1990	-0.88	-0.80	-0.97	-1.11	-0.61	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1991	-0.95	-0.86	-1.05	-1.20	-0.66	0.00	0.00	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1992	-1.37	-1.24	-1.42	-1.56	-0.96	-0.22	-0.20	-0.19	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1993	-0.36	-0.33	-0.60	-0.83	-0.25	0.48	0.44	0.41	0.56	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1994	1.22	1.11	0.68	0.33	0.85	1.54	1.42	1.31	1.41	0.75	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1995	3.91	3.55	2.90	2.33	2.73	3.32	3.06	2.82	2.82	2.02	1.14	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1996	6.97	6.33	5.41	4.61	4.87	5.34	4.92	4.53	4.42	3.47	2.44	1.14	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1997	11.61	10.54	9.24	8.10	8.11	8.38	7.72	7.11	6.82	5.65	4.42	2.92	1.59	-	X	X	X	X	X	X	X	X	X	X	X	X	X
1998	17.53	15.92	14.13	12.55	12.24	12.24	11.28	10.39	9.88	8.44	6.96	5.21	3.66	1.83	-	X	X	X	X	X	X	X	X	X	X	X	X
1999	24.23	22.01	19.66	17.59	16.92	16.61	15.30	14.09	13.32	11.58	9.84	7.81	6.00	3.91	1.83	-	X	X	X	X	X	X	X	X	X	X	X
2000	31.77	28.86	25.89	23.26	22.18	21.52	19.83	18.26	17.20	15.13	13.08	10.75	8.66	6.28	3.91	1.83	-	X	X	X	X	X	X	X	X	X	X
2001	40.25	36.56	32.90	29.65	28.10	27.04	24.91	22.95	21.56	19.12	16.73	14.05	11.65	8.96	6.28	3.91	1.83	-	X	X	X	X	X	X	X	X	X
2002	49.83	45.26	40.81	36.86	34.79	33.27	30.65	28.23	26.47	23.61	20.86	17.80	15.06	12.01	8.99	6.32	3.95	1.87	-	X	X	X	X	X	X	X	X
2003	60.64	55.07	49.75	45.02	42.34	40.29	37.11	34.19	32.01	28.69	25.52	22.05	18.93	15.50	12.11	9.10	6.43	4.06	1.94	-	X	X	X	X	X	X	X
2004	73.07	66.36	60.03	54.40	51.01	48.34	44.54	41.03	38.36	34.52	30.89	26.97	23.43	19.58	15.78	12.39	9.38	6.71	4.32	2.12	-	X	X	X	X	X	
2005	86.13	78.23	70.85	64.27	60.13	56.81	52.33	48.21	45.03	40.65	36.54	32.14	28.17	23.88	19.66	15.89	12.53	9.54	6.85	4.40	2.04	-	X	X	X	X	
2006	105.94	96.22	87.25	79.26	73.96	69.61	64.13	59.08	55.11	49.94	45.13	40.05	35.45	30.54	25.73	21.42	17.56	14.11	11.01	8.18	5.48	3.15	-	X	X	X	
2007	127.82	116.09	105.37	95.82	89.24	83.75	77.15	71.08	66.23	60.20	54.61	48.79	43.50	37.92	32.46	27.55	23.14	19.19	15.63	12.39	9.33	6.67	3.15	-	X	X	
2008	151.94	138.00	125.36	114.08	106.08	99.33	91.51	84.30	78.50	71.51	65.08	58.44	52.39	46.08	39.90	34.33	29.32	24.82	20.77	17.08	13.62	10.60	6.67	3.15	-	X	
2009	172.17	156.38	142.11	129.38	120.20	112.42	103.56	95.40	88.80	80.99	73.84	66.50	59.81	52.85	46.06	39.93	34.40	29.43	24.94	20.87	17.05	13.74	9.45	5.60	2.15	-	
2010	191.30	173.76	157.95	143.84	133.56	124.80	114.97	105.91	98.56	89.97	82.12	74.11	66.80	59.22	51.83	45.15	39.13	33.70	28.81	24.37	20.21	16.60	11.96	7.79	4.06	1.70	

Note:

[1] Values expressed as percentages.

Sources:

[1] Trial Exhibit 189, Dividend Interest Rate Tables.

[2] Expert Witness Report of Robert L. Hoyer, FSA, MAAA, Submitted for M. LaPlant v. Northwestern Mutual Life Company, Hoyer Actuarial Litigation, LLC, March 4, 2013.